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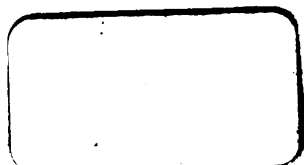
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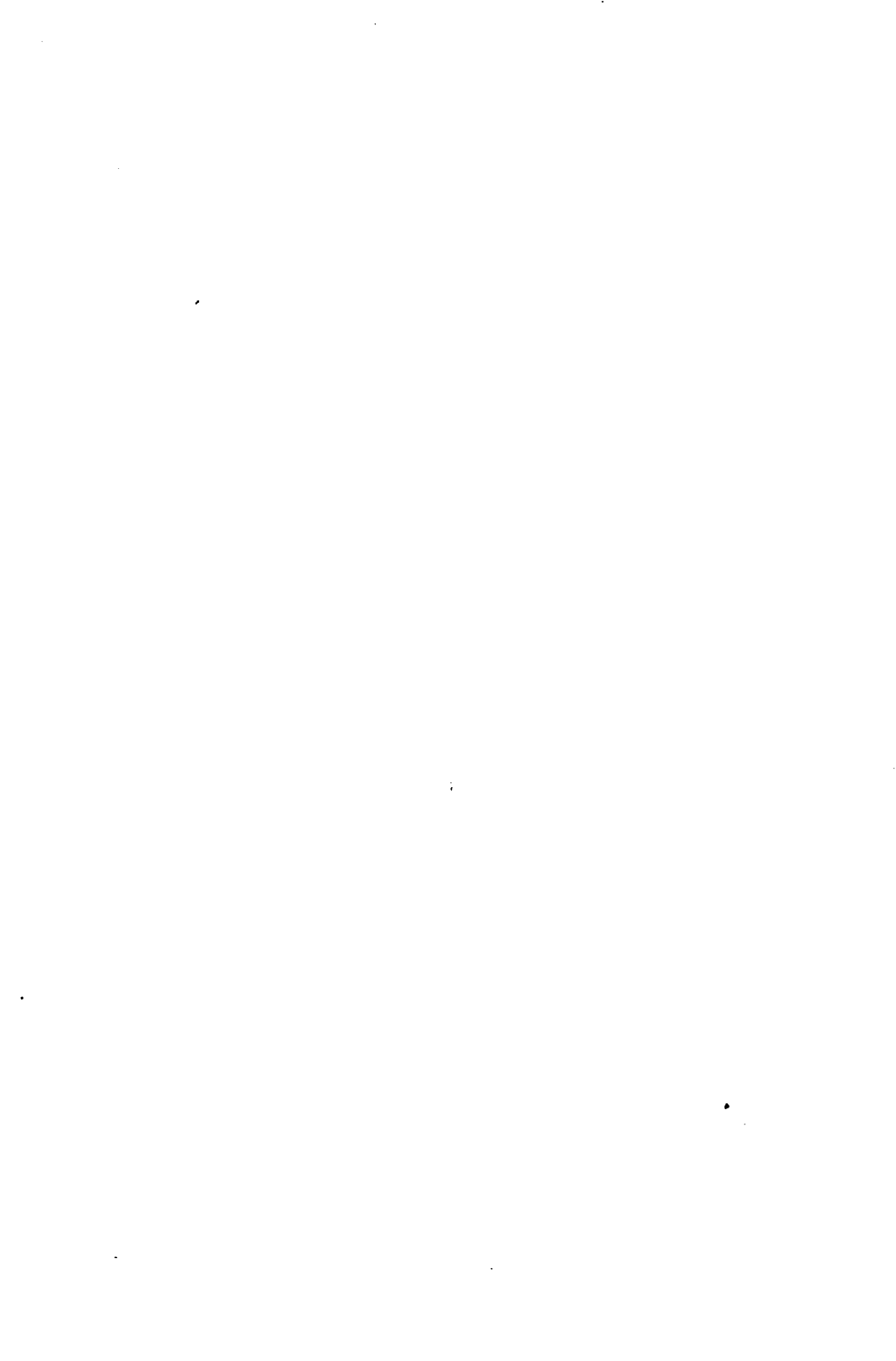
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AT THE

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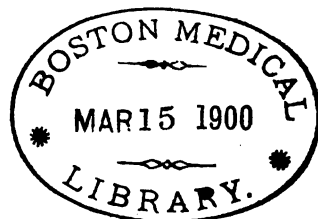
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Oliver M. Dewing, M. D., Superintendent.

STATE HOMEOPATHIC HOSPITAL, MIDDLETOWN.

Selden H. Talcott, M. D., Superintendent.

C. Spencer Kinney, Assistant Physician.

George Allen, M. D., Assistant Physician.

HUDSON RIVER STATE HOSPITAL, POUGHKEEPSIE.

C. W. Pilgrim, M. D., Superintendent.
Charles H. Langdon, M. D., Assistant Physician.
J. Elvin Courtney, M. D., Assistant Physician.
Thomas E. Bamford, M. D., Assistant Physician.

MARSHALL INFIRMARY, TROY.

Joseph D. Lomax, M. D., Superintendent.

UTICA STATE HOSPITAL, UTICA.

G. Alder Blumer, M. D., Superintendent.
Harold L. Palmer, M. D., Assistant Physician.
J. N. Teeter, M. D., Assistant Physician.

BINGHAMTON STATE HOSPITAL, BINGHAMTON.

Charles G. Wagner, M. D., Superintendent.
Charles C. Eastman, M. D., Assistant Physician.

ST. LAWRENCE STATE HOSPITAL, OGDENSBURG.

William Mabon, M. D., Superintendent.
R. H. Hutchings, M. D., Assistant Physician.
Warren L. Babcock, M. D., Assistant Physician.
Caroline L. Pease, M. D., Assistant Physician.

MATTEAWAN STATE HOSPITAL, FISHKILL LANDING.

Henry E. Allison, M. D., Superintendent.

BRIGHAM HALL, CANANDAIGUA.

D. R. Burrell, M. D., Resident Physician.

WILLARD STATE HOSPITAL, WILLARD.

William A. Macy, M. D., Superintendent.

ROCHESTER STATE HOSPITAL, ROCHESTER.

Eugene H. Howard, M. D., Superintendent.
Ezra B. Potter, M. D., Assistant Physician.

BUFFALO STATE HOSPITAL, BUFFALO.

Arthur W. Hurd, M. D., Superintendent.

STATE CUSTODIAL ASYLUM, ROME.

John F. Fitzgerald, M. D., Superintendent.

Daniel A. Harrison, M. D., Breezehurst Terrace, Whitestone, L. I.

Peter M. Wise, M. D., Pres. State Commission in Lunacy, New York.

Carlos F. MacDonald, M. D., Pleasantville, and 85 Madison Ave., New York.

Ralph L. Parsons, M. D., Greenmount, near Sing Sing.

O. J. Wilsey, M. D., Long Island Home, Amityville.

Frederick Sefton, M. D., The Pines, Auburn.

William D. Granger, M. D., Vernon House, Bronxville.

Frederick Peterson, M. D., 60 W. 50th St., New York.

Landon C. Gray, M. D., 6 E. 49th St., New York.

B. Sachs, M. D., 21 E. 65th St., New York.

E. D. Fisher, M. D., 6 W. 39th St., New York.

Charles H. Brown, M. D., 25 W. 45th St., New York.

H. Ernst Schmid, M. D., White Plains, New York.

Theo. H. Kellogg, M. D., Astor House, New York.

J. M. Mosher, M. D., 202 Lark St., Albany.

J. J. Kindred, M. D., River Crest, Astoria, Long Island.

NORTH CAROLINA—NORTH CAROLINA INSANE ASYLUM, RALEIGH.

George L. Kirby, M. D., Superintendent.

STATE HOSPITAL, MORGANTON.

P. L. Murphy, M. D., Superintendent.

Isaac M. Taylor, M. D., Assistant Physician.

STATE HOSPITAL, GOLDSBORO.

John F. Miller, M. D., Superintendent.

NORTH DAKOTA—NORTH DAKOTA HOSPITAL FOR THE INSANE, JAMESTOWN.

O. Wellington Archibald, M. D., Jamestown.

OHIO—LONG VIEW HOSPITAL, CARTRIDGE.

F. W. Harmon, M. D., Superintendent.

DAYTON STATE HOSPITAL, DAYTON.

J. M. Ratliff, M. D., Superintendent.

COLUMBUS STATE HOSPITAL, COLUMBUS.

A. B. Richardson, M. D., Superintendent.

ATHENS STATE HOSPITAL, ATHENS.

CLEVELAND STATE HOSPITAL, CLEVELAND.

H. C. Eyman, M. D., Superintendent.

TOLEDO STATE HOSPITAL, TOLEDO.

H. A. Tobey, M. D., Superintendent.

O. Everts, M. D., Cincinnati Sanitarium, College Hill.

George. F. Cook, M. D., Oxford Retreat, Oxford.

R. Harvey Cook, M. D., Oxford Retreat, Oxford.

A. B. Howard, M. D., Fair Oaks, Cuyahoga Falls.

OREGON—OREGON STATE INSANE ASYLUM, SALEM.

L. L. Rowland, M. D., Superintendent.

PENNSYLVANIA—PENNSYLVANIA HOSPITAL FOR THE INSANE, PHILADELPHIA.

John B. Chapin, M. D., Superintendent.

Henry B. Nunemaker, M. D., Assistant Physician.

A. R. Moulton, M. D., Assistant Physician.

Eli E. Josselyn, M. D., Assistant Physician.

J. Frank Edgerly, M. D., Assistant Physician.

FRIENDS' ASYLUM FOR THE INSANE, FRANKFORD, PHILADELPHIA.

Robert H. Chase, M. D., Superintendent.

PHILADELPHIA HOSPITAL (INSANE DEPARTMENT.)

D. E. Hughes, M. D., Resident Physician.

STATE HOSPITAL FOR THE INSANE, NORRISTOWN.

D. D. Richardson, M. D., Resident Physician, Department for Men.

Susan J. Taber, M. D., Resident Physician, Department for Women.

PENNSYLVANIA STATE LUNATIC HOSPITAL, HARRISBURG.

H. L. Orth, M. D., Superintendent.

W. E. Wright, M. D., Assistant Physician.

W. H. Harrison, M. D., Pathologist and Assistant Physician.

STATE HOSPITAL FOR THE INSANE, WARREN.

John Curwen, M. D., Superintendent.

Morris S. Guth, M. D., Assistant Physician.

STATE HOSPITAL FOR THE INSANE, DANVILLE.

Hugh B. Meredith, M. D., Superintendent.

Chas. B. Mayberry, M. D., Assistant Physician.

WESTERN PENNSYLVANIA HOSPITAL FOR THE INSANE, DIXMONT.

Henry A. Hutchinson, M. D., Superintendent.

34 AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION.

ASYLUM FOR THE CHRONIC INSANE, WERNERSVILLE.

W. Brown Ewing, M. D., Superintendent.
Katherine Northrop, M. D., Resident Physician, Women's Department.
Charles K. Mills, M. D., 1909 Chestnut St., Philadelphia.

RHODE ISLAND—BUTLER HOSPITAL FOR THE INSANE, PROVIDENCE.

William A. Gorton, M. D., Superintendent.
Henry C. Hall, M. D., Assistant Physician.

STATE INSANE ASYLUM, CRANSTON.

George F. Keene, M. D., Superintendent.
E. L. Wilson, M. D., Assistant Physician.

SOUTH CAROLINA—STATE HOSPITAL FOR THE INSANE, COLUMBIA.

J. W. Babcock, M. D., Superintendent.
J. L. Thompson, M. D., Assistant Physician.

SOUTH DAKOTA—SOUTH DAKOTA HOSPITAL FOR THE INSANE, YANKTON.

L. C. Mead, M. D., Superintendent.
William Searl, M. D., Assistant Physician.

TENNESSEE—CENTRAL HOSPITAL FOR THE INSANE, NASHVILLE.

John A. Beauchamp, M. D., Superintendent.
Paul W. Kirkpatrick, M. D., Assistant Physician.

EASTERN HOSPITAL FOR THE INSANE, KNOXVILLE.

Michael Campbell, M. D., Superintendent.

WESTERN HOSPITAL FOR THE INSANE, BOLIVAR.

John P. Douglas, M. D., Superintendent.
William P. Jones, M. D., Nashville.
William A. Cheatham, M. D., Nashville.
Preston W. Stone, M. D., Nashville.

TEXAS—STATE LUNATIC ASYLUM, AUSTIN.

NORTH TEXAS HOSPITAL FOR THE INSANE, TERRELL.

HOSPITAL FOR THE INSANE, SAN ANTONIO.

Charles M. Rosser, M. D., Dallas.

VERMONT—BRATTLEBORO RETREAT, BRATTLEBORO.

Shaller E. Lawton, M. D., Superintendent.
Whitefield N. Thompson, M. D., Assistant Physician.

VERMONT STATE ASYLUM FOR THE INSANE, WATERBURY.

George S. Bidwell, M. D., Assistant Physician.

VIRGINIA—EASTERN STATE HOSPITAL, WILLIAMSBURG.

James D. Moncure, M. D., Superintendent.

CENTRAL STATE HOSPITAL, PETERSBURG.

W. F. Drewry, Superintendent.

WESTERN STATE HOSPITAL, STAUNTON.

Benjamin Blackford, M. D., Superintendent.

SOUTHWESTERN STATE HOSPITAL, MARION.

R. J. Preston, M. D., Superintendent.

**WASHINGTON—WESTERN WASHINGTON HOSPITAL FOR THE INSANE,
FORT STEILACOOM.**

John W. Waughop, M. D., Superintendent.

EASTERN WASHINGTON HOSPITAL FOR THE INSANE, MEDICAL LAKE.

John M. Semple, M. D., Superintendent.

WEST VIRGINIA—WEST VIRGINIA HOSPITAL FOR THE INSANE, WESTON.

W. P. Crumbacker, M. D., Superintendent.

SECOND HOSPITAL FOR THE INSANE, SPENCER.

W. D. Row, M. D., Superintendent.

WISCONSIN—WISCONSIN STATE HOSPITAL FOR THE INSANE, MENDOTA.

W. B. Lyman, M. D., Superintendent.

NORTHERN HOSPITAL FOR THE INSANE, WINNEBAGO.

MILWAUKEE HOSPITAL FOR THE INSANE, WAUWATOSA.

M. J. White, M. D., Superintendent.

James H. McBride, M. D., Wauwatosa

John B. Edwards, M. D., Mauston.

William F. Wegge, M. D., Oshkosh.

Richard Dewey, M. D., Milwaukee Sanitarium, Wauwatosa.

BRITISH AMERICA.

ONTARIO—ASYLUM FOR THE INSANE, TORONTO.

Daniel Clark, M. D., Superintendent.

ASYLUM FOR THE INSANE, LONDON.

Richard M. Bucke, M. D., Superintendent.

H. E. Buchan, M. D., Assistant Superintendent.

ROCKWOOD HOSPITAL FOR THE INSANE, KINGSTON.

Charles K. Clarke, M. D., Superintendent.

ASYLUM FOR THE INSANE, HAMILTON.

James Russell, M. D., Superintendent.

Thomas W. Reynolds, M. D., Assistant Physician.

ASYLUM FOR THE INSANE, MIMICO, TORONTO.

Nelson H. Beemer, M. D., Superintendent.

ASYLUM FOR THE INSANE, BROCKVILLE.

John B. Murphy, M. D., Superintendent.

QUEBEC—PROTESTANT HOSPITAL FOR THE INSANE, MONTREAL.

T. J. W. Burgess, M. D., Superintendent.

ASILE DES ALIENES DE SAINT JEAN DE DIEU, LONGUE POINTE.

Georges Villeneuve, M. D., Superintendent.

J. A. Prieur, M. D., Assistant Physician.

E. Philippe Chagnon, M. D., Assistant Physician.

QUEBEC LUNATIC ASYLUM, QUEBEC.

A. Vallee, M. D., Superintendent.

E. J. Bourque, M. D., Montreal.

NOVA SCOTIA—NOVA SCOTIA HOSPITAL FOR THE INSANE, HALIFAX.

George L. Sinclair, M. D., Superintendent.

NEW BRUNSWICK—PROVINCIAL LUNATIC ASYLUM, ST. JOHN.

* James T. Steeves, M. D., Superintendent.

J. A. E. Steeves, M. D., Assistant Physician.

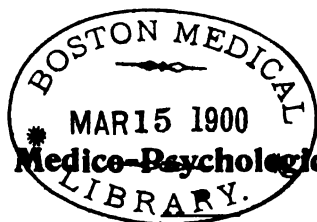
PRINCE EDWARD'S ISLAND—HOSPITAL FOR THE INSANE, CHARLOTTETOWN.

NEWFOUNDLAND—LUNATIC ASYLUM, ST. JOHN'S.

* Died 1897.

HONORARY MEMBERS.

- J. C. Bucknill, M. D., F. R. C. P., F. R. S., Killarney, Bournemouth,
England.
C. Lockhart Robertson, M. D., F. R. C. P., London, England.
T. S. Clouston, M. D., F. R. C. P., F. R. S. E., Edinburgh, Scotland.
David Yellowlees, M. D., F. F. P. S., LL. D., Glasgow, Scotland.
A. Motet, M. D., Paris, France.
A. Tamburini, M. D., Reggio-Emilia, Italy.
Foster Pratt, M. D., Kalamazoo, Mich.
Stephen Smith, M. D., New York, N. Y.
G. Stanley Hall, Ph. D., Worcester, Mass.
Charles F. Folsom, M. D., Boston, Mass.
James Rutherford, M. D., F. R. C. P., F. F. P. S., Dumfries, Scotland.
S. Weir Mitchell, M. D., Philadelphia, Pa.
Victor Parant, M. D., Toulouse, France.
Jules Morel, M. D., Ghent, Belgium.
Emmanuel Régis, M. D., Bordeaux, France.
René Semelaigne, M. D., Paris, France.



American Medico-Psychological Association.

CONSTITUTION.

ARTICLE I.

This organization shall be known as the AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION, this name being adopted in 1892 by "The Association of Medical Superintendents of American Institutions for the Insane," founded in 1844.

ARTICLE II.

The object of this Association shall be the study of all subjects pertaining to mental disease, including the care, treatment, and promotion of the best interests of the insane.

ARTICLE III.

There shall be four classes of members: (1) Active members, who shall be physicians, resident in the United States and British America, especially interested in the treatment of insanity; (2) Associate members; (3) Honorary members; and (4) Corresponding members.

ARTICLE IV.

The officers of the Association shall consist of a President, Vice-President, Secretary—who shall also be the Treasurer—two Auditors, and twelve other members of the Association to be called Councilors; all of these officers together shall constitute a body which shall be known as the Council.

NOTE.—The Association of Medical Superintendents of American Institutions for the Insane was founded in 1844 by the original thirteen members. In 1891, when its membership had increased to more than two hundred, it was proposed, at the annual meeting of that year in Washington, to form a better organization of the Association—its work having previously been done under the somewhat unstable rules of custom and a few resolutions scattered through its records. The proposition was agreed to, and at the annual meeting in Washington, in 1892, there was unanimously adopted the following Constitution and By-Laws, with the change of name to the AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION.

ARTICLE V.

The active members of the Association shall include all past and present medical superintendents named in the official list published for 1892 of members of "The Association of Medical Superintendents of American Institutions for the Insane;" the Honorary members shall include those so designated in that list; the Associate members shall include all the assistant physicians named in the same list; it being provided that said list shall be corrected by the Council, as may be necessary to carry out the intention of the Constitution as to the continuance of existing membership.

Every candidate for admission to the Association hereafter, in either of the three above-named classes of members, or as a Corresponding member, shall be proposed in writing to the Council, in an application addressed to the President, at least two months prior to the meeting of the Association, with a statement of the candidate's name and residence, professional qualifications, and any appointments then or formerly held, and certifying that he is a fit and proper person for membership. In the case of a candidate for Active or Associate membership, the application shall be signed by three Active members of the Association; and by six Active members for the proposal of an Honorary or Corresponding member. The names of all candidates approved by a majority vote of members of the Council present at its annual meeting, shall be presented on a written or printed ballot to the Association at its concurrent annual meeting, at least one session previous to that at which the election is made, which shall be by ballot at a regular session, and require a majority vote of the members present. The only persons eligible for Associate membership are regularly appointed assistant physicians of institutions for the insane that are regarded to be properly such by the Council; and they are eligible for such membership only during the time they are holding such appointments. After holding such an appointment three years, an Associate member may become an active member by making application in writing to the Council, and upon its approval, being elected in the manner heretofore prescribed.

ARTICLE VI.

Physicians, and others who have distinguished themselves by their attainments in branches of science connected with insanity, or who have rendered signal service in philanthropic efforts to promote the interests of the insane, shall be eligible for Honorary membership.

Physicians not resident in the United States and British America, who are actively engaged in the treatment of insanity, may be elected Corresponding members.

Active members only shall be entitled to a vote at any meeting, or be eligible to any office. Honorary and Corresponding members shall be exempt from all payments to the Association.

ARTICLE VII.

Any member of the Association may withdraw from it on signifying his desire to do so in writing to the Secretary, provided that he shall have paid all his dues to the Association. Any member who shall fail for three successive years to pay his dues after special notice by the Treasurer shall be regarded as having resigned his membership, unless such dues shall have been remitted by the Council for good and sufficient reasons.

Any member who shall be declared unfit for membership by a two-thirds vote of the members of the Council present at an annual meeting of that body shall have his name presented by it for the action of the Association from which he shall be dismissed if it be so voted by two-thirds of the members present at its annual meeting.

ARTICLE VIII.

The Officers and Councilors shall be elected at each annual meeting. They shall be nominated to the Association, on the second day of the annual meeting in the order of business of the first session of that day, by a committee appointed for that purpose by the president; and the election shall take place immediately. The election shall be made as the meeting may determine, and the person who shall have received the highest number of votes shall be declared elected to the office for which he has been nominated.

The President, Vice-President, the Secretary and Treasurer, and Auditors, shall hold office for one year or until the begin-

ning of the term for which their successors are elected. The Secretary and Treasurer and one Auditor are eligible for re-election. At the first election of Councilors, four members shall be elected for one year, four for two years, and four for three years; and thereafter four members shall be elected each year, to hold office three years, or until their successors are elected. The President, Vice-President, one Auditor, and the four retiring Councilors are ineligible for re-election to their respective offices for one year immediately following their retirement. All the officers and Councilors shall enter upon their duties immediately after their election, excepting the President and Vice-President. When any vacancies occur in any of the offices of the Association, they shall be filled by the Council until the next annual meeting.

A quorum of the Council shall be formed by six members; and of the Association by twenty Active members.

ARTICLE IX.

The President and Vice-President for the year shall enter on their duties at the close of the business of the annual meeting at which they are elected. The President shall prepare an inaugural address, to be delivered at the opening session of the meeting. He shall preside at all the annual or special meetings of the Association or Council, or in his absence at any time the Vice-President shall act in his place.

The Secretary and Treasurer shall keep the records of the Association and perform all the duties usually pertaining to that office, and such other duties as may be prescribed for him by the Council; and under the same authority he shall receive and disburse and duly account for all sums of money belonging to the Association. He shall keep accurate accounts and vouchers of all his receipts and payments on behalf of the Association, and of all invested funds, with the income and disposition thereof, that may be placed in his keeping, and shall submit these accounts, with a financial report for the preceding year, to the Council, at its annual meeting. Each annual statement shall be examined by the Auditors, who will prepare and present at each annual meeting of the Association a report showing its financial condition. The Council shall have charge of any funds in the possession of the Association, and which shall be invested

under its direction and control. The Council shall keep a careful record of its proceedings, and make an annual report to the Association of matters of general interest. The Council shall also print annually the proceedings of the meetings of the Association and the reports of the Treasurer and Auditors.

The Council is empowered to manage all the affairs of the Association, subject to the Constitution and By-Laws; to appoint committees from the membership of the Association, and spend money out of its surplus funds for special scientific investigations in matters pertaining to the objects of the Association; to publish reports of such scientific investigations; to apply the income of special funds, at its discretion, to the purposes for which they were intended. The Council may also engage in the regular publication of reports, papers, transactions and other matters, in an annual volume, or in a journal, in such manner and at such time as the Council may determine, with the approval of the Association.

ARTICLE X.

Amendments to the Constitution and By-Laws shall be taken up for consideration at the first session of the second day of any annual meeting, and may be made by a two-thirds vote of all the members present, provided that notice of such proposed amendments be given in writing at the annual meeting next preceding. It shall be the duty of the Secretary to send to all the members a copy of any proposed amendment at least three months previous to the meeting when the action is to be taken.

BY-LAWS.

ARTICLE I.

The meetings of the Association shall be held annually. The time and place of each meeting shall be named by the Council, and reported to the Association for its action at the preceding meeting. Each annual meeting shall be called by a printed announcement sent to each member, at least three months previous to the meeting.

The Council shall hold an annual meeting concurrent with the annual meeting of the Association; and the Council shall hold as many sessions, and at such times, as the business of the Association may require.

Special meetings of the Council may be called by the order of the Council. The President shall have authority at any time, at his own discretion, to instruct the Secretary to call a special meeting of the Council; and he shall be required to do so upon a request signed by six members of the Council. Such special meetings shall be called by giving at least four weeks' written notice.

ARTICLE II.

Each and every Active and Associate member shall pay an annual tax to the Treasurer, the amount to be fixed annually by the Council, not to exceed five dollars for an Active member, or two dollars for an Associate member.

ARTICLE III.

The order of business of each annual meeting of the Association shall be determined by the Council, and shall be printed for the use of the Association at its meeting. The Council shall also make all arrangements for the meetings of the Association, appointing such auxiliary committees from its own body, or from other members of the Association, and making such other provisions as shall be requisite, at its discretion.

NOTE.

The accompanying volume containing the proceedings, papers, and discussions of the American Medico-Psychological Association, at its fifty-third annual meeting, is printed by the Council with the approval of the Association.

C. B. BURR,
SECRETARY.

FLINT, Mich. October 1, 1897.

American Medico-Psychological Association.

PROCEEDINGS OF THE FIFTY-THIRD ANNUAL MEETING.

TUESDAY, MAY 11, 1897.

FIRST SESSION.

The Association met at 10 a. m., in the hall of the Medical and Chirurgical Faculty of Maryland, 847 North Eutaw St., Baltimore, and was called to order by the President, Dr. T. O. Powell, of Georgia.

Dr. George H. Rohé introduced the Hon. Lloyd Lowndes, Governor of the State of Maryland, who said:

Mr. President and Gentlemen of the American Medico-Psychological Association:

Marylanders are happy when welcoming strangers to their State, and entertaining them within the portals of their own homes. They are kind to profusion and spare no pains to please. It gives me pleasure to extend the right hand of fellowship to you gentlemen who are the managers and directors of those 'houses of grace,' which through your skill and kindness help to make life bearable to those suffering from the darkness of affliction. Since 1844 this Association has met at stated times, bringing together in convention men from all parts of this country to exchange thought and to learn what has been done to lighten the burdens of human suffering and to extend human happiness.

The time was when lunacy was considered a special manifestation of Divine wrath, and the victim was banished from friends, deprived of sympathy, and, in the charge of inhuman keepers, dragged out a miserable existence. He was looked upon as a wild beast, and the treatment received often reduced him to that state. At the beginning of this century there were in this country but three institutions for the care of the insane. In 1750 Franklin advocated the establishment of such an institution in Pennsylvania, and that is the oldest in the United States. Within its walls the insane were installed, and treated with kindness instead of by chains and solitary punishment. I believe in 1769 Virginia passed an act establishing an institution that was opened in 1773. The institution first mentioned was not exclusively for the insane. Maryland inaugurated a similar movement in 1774, but did not carry her intentions into practical effect until 1797, when an institution was established on Broadway, known as the Maryland Hospital, where you gentlemen met in 1876 and were entertained by the Medical Faculty of this State.

When Franklin spoke for humane treatment in 1750, and Pinel broke the chains from the insane in Paris in 1792, and Tuke advocated non-restraint in England in the same year, and Rush of Philadelphia showed that insanity was not a curse, but a disease, and that buildings especially devised for them could be built, and that physicians especially skilled should have charge of such institutions, a new era opened up for the insane. The most practical good, however, came through the efforts of that perfect and noble woman, Dorothea L. Dix, who, without fortune and in bad health, depending solely upon her own will and the good of her cause, visited every asylum in the United States and almost every prison, to investigate the treatment of the inmates. No one has ever undertaken such a task before or since. Her observations were reported to the different state legislatures of this country and every one gave the relief for which she petitioned. It was through her efforts that in 1852 the Maryland legislature built what is known as the Maryland Hospital for the Insane, at Catonsville. The memory of her good deeds will outlast all those buildings which must crumble and decay. You remember the work of Ray of Rhode Island, Gundry of Maryland, and Gray of Utica. You recall the gentleness and devotion of Mrs. Ballington Booth, and of Mrs. Morse, of Massachusetts, whose ancestors came from Maryland. In Baltimore we have the examples of Johns Hopkins, Moses Sheppard and Enoch Pratt. Sheppard's bequest was the largest amount ever left in the United States to a hospital for the insane. Through his benefactions the Sheppard Asylum was built. It is beautifully located within a few minutes' ride from the city, and during its three years of active operation it has done much to alleviate the anxieties of the friends of those who are afflicted with insanity. Enoch Pratt made the Sheppard Asylum his residuary legatee, and if his bequest is accepted by the trustees, it will probably be the largest sum of money ever yet contributed for the care of the insane.

I again welcome you, gentlemen, to this State and hope that your stay may be pleasant and agreeable. To you are entrusted the lives and happiness of many people.

"The sweetest blessings falling from Above,
Are human sympathy and human love."

One strengthens hope by stimulating cheer; the other softens sorrow with its tears, and together they form the golden rim that spans the borders of eternity.

Dr. Rohé: "The Association meets in this hall by the courtesy of the Medical and Chirurgical Faculty of Maryland, and I have now the honor of introducing to you the President of that Faculty, Dr. C. M. Ellis."

Dr. Ellis spoke as follows:

Gentlemen of the American Medico-Psychological Association:

It is a great pleasure that the first function falling to me in the discharge of my duties as President of the State Faculty, is to give you a hearty wel-

come to our new home. It is yours to do with as you like, and to use as long as it pleases you. Nor is this broad welcome perfunctory, for it is a proud day for the profession of Maryland that we are in possession of a home not only ample for all present needs of the profession of the city and State, but equal, we hope, to any demands our brethren outside of the State may make upon us. We hope that as our city of Baltimore grows in renown as a medical center, as it surely will, it will become yearly more attractive to the National Associations, and that in the future we shall have many opportunities of extending to others the same cordial welcome we to-day so cheerfully give to you.

Your coming to Baltimore at this time is opportune to the general interests of the insane within our borders, for this, with us, is an era of renewed activity of agencies looking to the improvement of the condition of this class of unfortunates. The Sheppard Asylum, after nearly half a century of prudent preparation, has recently opened under most favorable auspices, and its judicious management has attracted to it the residuary estate—a princely sum—of a distinguished citizen recently deceased. The State has within the past two years purchased Springfield, a magnificent property, and the Second Maryland Hospital for the Insane is, under liberal appropriations, rapidly developing there. Much has been done, much is doing, but unfortunately, much remains to be done. Our almshouses and jails are still tenanted by the feeble-minded and distraught, and county asylums perpetuate their abominations without even justifying the poor excuse for their existence in lessened cost.

Some effort is being made to arouse the conscience of the State to its further duty towards those of the insane who are deprived of opportunity for betterment in the wards of well-equipped hospitals. This work should be assumed by the profession, and a committee of the Faculty has been appointed to formulate desired legislation and to advocate its enactment into law by our legislature.

Our ultimate aim is the aim of all alienists and philanthropists the world over, namely, State care of the insane. Every insane man, woman or child, whatever his social condition, should, under a humane and enlightened government, be entitled to a certain minimum provision within the confines of hospitals or asylums sustained by the State, for their cure or for their care.

I do not hesitate, as far as this State is concerned, to declare that this end can be attained as soon as the conscience of the medical profession of the State can be aroused and its plain duty in the premises acknowledged; for what the united profession of Maryland intelligently wants and persistently demands, can always be attained. This, then, is our concern, and it is the hope of those of us interested in this work that your deliberations will attract the attention of the medical men of the State, and assist us in arousing them to a just appreciation of their responsibility towards this otherwise defenseless and helpless class of our population.

There is a lesson that is trite to every doctor who thinks, that needs to be iterated and reiterated in the public ear, until some impression is made

upon the public mind, and that is, that private care of the insane breeds poverty. I have, myself, seen so many families impoverished by the expense incurred in sustaining its insane members either at home or in public institutions, that the disastrous lesson made early a profound impression upon my mind. And my long familiarity with almshouse life illustrates this fact from another point of view, which is this, that a great number of the idiotic and incurably insane inmates of the county almshouses are descendants one, two or perhaps three, generations removed, of former well-to-do, prosperous, indeed influential parentage, who, with their progeny are either extinct or pauperized, where they do not survive as mental imbeciles.

State care of the insane, therefore, commends itself to the medical profession, on which in this State, at least, its early attainment largely depends.

Again, gentlemen, in the name of the Medical and Chirurgical Faculty, I give you cordial greeting and welcome to our city and State.

President Powell responded as follows:

In behalf of this Association, I very gratefully accept the cordial welcome so kindly tendered by His Excellency, the Governor of the great commonwealth of Maryland, and Dr. Ellis, President of the Medical and Chirurgical Faculty. We are glad to find ourselves in Baltimore, and while we are profoundly grateful for your kindly greeting, it is nothing more than we had every reason to expect. You are the representatives of a State and city, famed all over the land for elegance and breadth of hospitality. We are, as you know, an international association, from ocean to ocean, from the Gulf of Mexico to Hudson Bay. The institutions of which we have charge, aim to minister to those mentally afflicted, and the work that we try to do appeals pathetically to all who have hearts to sympathize with suffering humanity, and we know that we find hearts responsive in your midst.

We are glad to be in a State and city famous during many years for the number and efficiency of their benevolent institutions. Look in whatever direction we may, we have before our eyes some magnificent building intended as a refuge for those in need. The Catholic, Protestant and Hebrew have vied with each other in providing shelter for the orphan, homes for the aged, homes for friendless babes; the blind, the lame, the deaf, the dumb, find provision for their needs, and here also large hospitals designed as asylums for the insane open wide their portals to that class of the afflicted.

We are glad to be where a hospital endowed by a native of this city and bearing his name, exists; a hospital that has no superior, and perhaps not an equal in its equipment; a hospital with its doors open to the sick of every condition and every race, and which provides all the relief the most advanced science can give. The moral grandeur and blessed results of such a hospital to science and suffering humanity can never be estimated. All honor to the memory of Johns Hopkins and Dr. Richard Sprigg Steuart; the influence of such men never dies, but lives on forever to bless the world. We are glad to be in a State and city of magnificent libraries; where Peabody and Pratt, men from the North, left their monuments where they laid

the foundations of their fortunes. We are glad to be where lived those noble benefactors of the insane, Moses Sheppard and Enoch Pratt. We are glad to be in a city where fair women, long famed for peerless beauty, have won highest fame by the boundlessness of their charities.

We know that your State is a grand one, and that your city is a fair one, and we would be glad to stand upon the surrounding hills to look upon the blue peaks of the distant Blue Ridge upon the one side, and to feast the eye upon the matchless beauty of the Chesapeake with its steamers and shipping on the other; to stand where the brave defenders drove back the invaders in 1812; to look with admiring gaze upon the monument erected to Washington, so noted for its grand beauty and symmetry; to wander under the grand old oaks of Druid Hill, and to walk in the flower-bedecked paths of Patterson Park. But our mission is a serious one; we are here for labor, not for amusement, and may not be able to go where we would, but we assure you, sirs, that we none the less appreciate the privileges your kindness grants us. Now, in conclusion, allow me to say, in all sincerity, and for all, we thank you cordially."

At the request of the President, Dr. W. W. Godding, of Washington, took the chair.

Upon motion of Dr. Brush the Medical profession of Baltimore was unanimously invited to attend the sessions of the Association.

Upon motion of Dr. Charles G. Hill the members of the Lunacy Commission of the State of Maryland and the Secretary of the Commission, Dr. William Lee, were invited to attend the sessions of the Association and accorded the privileges of the floor.

Dr. William M. Edwards, of Michigan, introduced the Hon. A. J. Mills, of Kalamazoo, Mich., Trustee of the Michigan Asylum for the Insane, who was also unanimously accorded the privileges of the floor.

A recess was then taken for the registration of members.

The following members were present during the whole or a portion of the session:

Adams, George S., M. D., Medical Superintendent Westborough Insane Hospital, Westborough, Mass.

Allen, H. D., M. D., Milledgeville, Ga.

Allison, Henry E., M. D., Medical Superintendent Matteawan State Hospital, Fishkill Landing, N. Y.

Babcock, J. W., M. D., Medical Superintendent State Hospital for the Insane, Columbia, S. C.

Babcock, Warren L., M. D., Assistant Physician St. Lawrence State Hospital, Ogdensburg, N. Y. (*Associate Member.*)

- Bancroft, Charles P., M. D., Medical Superintendent New Hampshire Asylum for the Insane, Concord, N. H.
- Beemer, Nelson H., M. D., Superintendent Mimico Asylum for the Insane, Toronto, Ont.
- Berkley, Henry J., M. D., Attending Physician City Insane Asylum, Baltimore, Md.
- Blackford, Benjamin, M. D., Medical Superintendent Western State Hospital, Staunton, Va.
- Blumer, G. Alder, M. D., Medical Superintendent Utica State Hospital, Utica, N. Y.
- Brush, Edward N., M. D., Physician-in-Chief and Superintendent Sheppard Asylum, Towson, Md.
- Burrell, Dwight R., M. D., Resident Physician Brigham Hall, Canandaigua, N. Y.
- Burgess, T. J. W., M. D., Medical Superintendent Protestant Hospital for the Insane, Montreal, P. Q.
- Burr, C. B., M. D., Oak Grove Hospital, Flint, Mich.
- Chapin, John B., M. D., Physician and Superintendent Pennsylvania Hospital for the Insane, Philadelphia, Pa.
- Chase, Robert H., M. D., Medical Superintendent Friends' Asylum, Frankford, Pa.
- Clark, Daniel, M. D., Medical Superintendent Asylum for the Insane, Toronto, Ont.
- Clarke, Charles K., M. D., Medical Superintendent Rockwood Hospital, Kingston, Ont.
- Crumbacker, W. P., M. D., Medical Superintendent West Virginia Hospital for the Insane, Weston, W. Va.
- Curwen, John, M. D., Medical Superintendent State Hospital for the Insane, Warren, Pa.
- Dewey, Richard, M. D., Milwaukee Sanitarium, Wauwatosa, Wis.
- Dold, William E., M. D., Assistant Physician Bloomingdale Asylum, White Plains, N. Y., (*Associate Member.*)
- Drewry, W. F., M. D., Medical Superintendent Central State Hospital, Petersburg, Va.
- Edwards, William M., M. D., Medical Superintendent Michigan Asylum for the Insane, Kalamazoo, Mich.
- Eyman, H. C., M. D., Medical Superintendent Cleveland State Hospital, Cleveland, Ohio.

- French, Edward, M. D., Superintendent Medfield Insane Asylum, Medfield, Mass.
- Gilman, H. A., M. D., Medical Superintendent Iowa Hospital for the Insane, Mt. Pleasant, Ia.
- Givens, A. J., M. D., Stamford Hall, Stamford, Conn.
- Godding, W. W., M. D., Medical Superintendent Government Hospital for the Insane, Washington, D. C.
- Gundry, Richard F., M. D., Richard Gundry Home, Catonsville, Md.
- Hancker, W. H., M. D., Medical Superintendent Delaware State Hospital, Farnhurst, Del.
- Harrington, Arthur H., M. D., Physician Asylum for Insane Criminals, Bridgewater, Mass.
- Heyman, Marcus B., M. D., Assistant Physician Manhattan State Hospital, Ward's Island, N. Y. (*Associate Member.*)
- Hill, C. G., M. D., Attending Physician Mt. Hope Retreat, Baltimore, Md.
- Hill, Gershom H., M. D., Medical Superintendent Iowa Hospital for the Insane, Independence, Ia.
- Hinckley, L. S., M. D., Medical Superintendent Essex County Hospital, Newark, N. J.
- Holmes, Charles M., M. D., Assistant Physician Northampton Lunatic Hospital, Northampton, Mass. (*Associate Member.*)
- Howard, Eugene H., M. D., Medical Superintendent Rochester State Hospital, Rochester, N. Y.
- Howard, Herbert B., M. D., Medical Superintendent Asylum for Chronic Insane, Tewksbury, Mass.
- Hoyt, Frank C., M. D., Medical Superintendent Iowa Hospital for the Insane, Clarinda, Ia.
- Hurd, Arthur W., M. D., Superintendent Buffalo State Hospital Buffalo, N. Y.
- Hurd, Henry M., M. D., Baltimore, Md.
- Kulp, John H., M. D., Superintendent Insane Department Mercy Hospital, Davenport, Ia.
- Long, Oscar R., M. D., Medical Superintendent Asylum for Dangerous and Criminal Insane, Ionia, Mich.
- Lyon, Samuel B., M. D., Medical Superintendent Bloomingdale Asylum, White Plains, N. Y.
- Mabon, William, M. D., Superintendent St. Lawrence State Hospital, Ogdensburg, N. Y.

- Macdonald, A. E., M. D., General Superintendent Manhattan State Hospital, Ward's Island, N. Y.
- Macy, William Austin, M. D., Superintendent Willard State Hospital, Willard, N. Y.
- Mead, Leonard C., M. D., Medical Superintendent South Dakota Hospital for the Insane, Yankton, S. D.
- Meredith, Hugh B., M. D., Medical Superintendent State Hospital for the Insane, Danville, Pa.
- Miller, John F., M. D., Medical Superintendent State Hospital, Goldsboro, N. C.
- Mills, Charles K., M. D., 1909 Chestnut St., Philadelphia, Pa.
- Mitchell, Thomas J., M. D., Medical Superintendent Mississippi State Lunatic Asylum, Jackson, Miss.
- Mosher, J. Montgomery, M. D., 202 Lark St., Albany, N. Y.
- Moulton, A. R., M. D., Assistant Physician Pennsylvania Hospital for the Insane, Philadelphia, Pa.
- Murphy, J. B., M. D., Medical Superintendent Asylum for the Insane, Brockville, Ont.
- Murphy, P. L., M. D., Medical Superintendent State Hospital, Morganton, N. C.
- Neff, Irwin H., M. D., Assistant Physician Eastern Michigan Asylum, Pontiac, Mich. (*Associate Member.*)
- Norris, Milton D., M. D., Assistant Physician Second Hospital for the Insane, Sykesville, Md.
- Orth, H. L., M. D., Medical Superintendent Pennsylvania State Lunatic Hospital, Harrisburg, Pa.
- Page, Charles W., M. D., Medical Superintendent Danvers Lunatic Hospital, Danvers, Mass.
- Park, John G., M. D., Groton, Mass.
- Parsons, Ralph L., M. D., Greenmount, near Sing Sing, N. Y.
- Pilgrim, Charles W., M. D., Medical Superintendent Hudson River State Hospital, Poughkeepsie, N. Y.
- Powell, Theophilus O., M. D., Medical Superintendent State Lunatic Asylum, Milledgeville, Ga.
- Preston, R. J., M. D., Medical Superintendent Southwestern State Hospital, Marion, Va.
- Ratliff, J. M., M. D., Superintendent Dayton State Hospital, Dayton, Ohio.
- Reynolds, Thomas W., M. D., Assistant Physician Asylum for the Insane, Hamilton, Ont. (*Associate Member.*)

- Richardson, A. B., M. D., Medical Superintendent Columbus State Hospital, Columbus, Ohio.
- Roberts, Linnaeus A., M. D., Assistant Physician Boston Insane Hospital, Boston, Mass. (*Associate Member.*)
- Robinson, J. F., M. D., Medical Superintendent Asylum No. 3, Nevada, Mo.
- Rogers, Joseph G., M. D., Medical Superintendent Northern Indiana Hospital for the Insane, Longcliff, Logansport, Ind.
- Rohé, George H., M. D., Medical Superintendent Second Hospital for the Insane, Sykesville, Md.
- Row, W. D., M. D., Superintendent Second Hospital for the Insane, Spencer, W. Va.
- Sachs, B., M. D., 21 East 65th St., New York, N. Y.
- Sanborn, Bigelow T., M. D., Medical Superintendent Maine Insane Hospital, Augusta, Me.
- Scribner, Ernest V., M. D., Medical Superintendent Worcester Insane Asylum, Worcester, Mass.
- Searcy, James T., M. D., Medical Superintendent Alabama Bryce Hospital, Tuscaloosa, Ala.
- Sefton, Frederick, M. D., The Pines, Auburn, N. Y.
- Selling, L. M., M. D., Broadview, Holyoke, Mass. (*Associate Member.*)
- Taber, Susan J., M. D., Physician Department for Women State Hospital for the Insane, Norristown, Pa.
- Tobey, Henry A., M. D., Medical Superintendent Toledo State Hospital, Toledo, Ohio.
- Tuttle, George T., M. D., Assistant Physician McLean Hospital, Waverley, Mass. (*Associate Member.*)
- Wade, J. Percy, M. D., Medical Superintendent Maryland Hospital for the Insane, Catonsville, Md.
- Wagner, Charles G., M. D., Medical Superintendent Binghamton State Hospital, Binghamton, N. Y.
- White, M. J., M. D., Medical Superintendent Milwaukee Hospital for the Insane, Wauwatosa, Wis.
- Wise, P. M., M. D., President State Commission in Lunacy, Albany, N. Y.
- Woodbury, Charles E., M. D., Inspector of Institutions State Board of Lunacy and Charity, Boston, Mass.
- Woodson, C. R., M. D., Medical Superintendent State Lunatic Asylum No. 2, St. Joseph, Mo.

Worcester, William L., M. D., Pathologist Danvers Lunatic Hospital, Danvers, Mass.

Also as guests of the Association:

Dr. Conway, of Staunton, Va.

H. A. Reeves, Commissioner in Lunacy, Albany, N. Y.

Lewis W. Hall, President Board of Trustees Pennsylvania State Lunatic Hospital, Harrisburg, Pa.

A. J. Mills, President Board of Trustees Michigan Asylum for the Insane, Kalamazoo, Mich.

E. C. Reid, Member Board of Trustees Michigan Asylum for Dangerous and Criminal Insane, Ionia, Mich.

Dr. A. T. McDonald, of Iowa.

The President appointed Drs. A. B. Richardson, of Ohio, C. K. Clarke, of Ontario, and W. F. Drewry, of Virginia, as Committee to nominate officers of the Association for the ensuing year.

The address of the President, "A Sketch of Psychiatry in the Southern States," was then read.

On motion of Dr. Blackford, of Virginia, seconded by Dr. Blumer, of New York, the thanks of the Association were tendered Dr. Powell for his exceedingly interesting and instructive address, and a copy requested for publication.

The Secretary presented his financial statement [*See Page 73*] which was referred to the Auditors.

Adjourned.

SECOND SESSION.

The Association was called to order by the President at 3 o'clock p. m.

The following papers were read:

"General Questions of Auto-Infection," Dr. Charles K. Clarke, Kingston, Ont.

"The Role of Auto-Infection in Melancholia and Epilepsy," Dr. Charles G. Hill, Baltimore, Md.

"Clinical Aspects of Auto-Intoxication," Dr. Arthur W. Hurd, Buffalo, N. Y.

Which were discussed by Dr. Van Gieson, of the Pathological Institute of the New York State Hospitals.

A "Demonstration of Various Types of Changes in the Giant Cells of the Paracentral Lobule," was then given by Dr. Adolf Meyer, of Worcester, Mass.

Adjourned.

THIRD SESSION.

The Association was called to order by the President at 8 p. m.

The following papers were read:

"The Development of the Higher Brain Centers," Dr. Stewart Paton, Baltimore, Md.

"The Genesis of a Delusion," Dr. A. B. Richardson, Columbus, Ohio.

"The Psychology of Insane Delusions," Dr. W. L. Worcester, North Danvers, Mass.

Which were discussed by Drs. Hurd, Brush, Burr and Worcester.

Also the following:

"Arterial Sclerosis, Aneurism and Multiple Softening in Progressive Dementia," Dr. Charles K. Mills and Dr. Mary A. Schiveley, Philadelphia, Pa.; which was discussed by Drs. Berkley and Meyer.

Adjourned.

WEDNESDAY, MAY 12, 1897.

FIRST SESSION.

The meeting was called to order by the President at 10 o'clock.

The Secretary reported that the Council had recommended the following applications for membership:

For Honorary Membership.—Dr. René Semelaigne, Paris, France.

For Active Membership.—Dr. Nelson H. Beemer, Mimico, Ont.; Dr. Oliver M. Dewing, King's Park, N. Y.; Dr. Robert M. Elliott, Brooklyn, N. Y.; Dr. Edward French, Medfield, Mass.; Dr. J. L. Hildreth, Cambridge, Mass.; Dr. Edward B. Lane, Boston, Mass.; Dr. William B. Lyman, Mendota, Wis.; Dr. A. E. Macdonald, Ward's Island, N. Y.; Dr. William A. Macy, Willard, N. Y.; Dr. Hugh F. McNary, Lakeland, Ky.;

Dr. John B. Murphy, Brockville, Ont.; Dr. Hartstein W. Page, Worcester, Mass.; Dr. W. F. Scott, Lexington, Ky.; Dr. J. Percy Wade, Catonsville, Md.; Dr. J. L. Warden, Pleasant Hill, Mo.; Dr. William L. Worcester, Danvers, Mass.

For Associate Membership.—Dr. Warren L. Babcock, Ogdensburg, N. Y.; Dr. George S. Bidwell, Waterbury, Vt.; Dr. George Boody, Independence, Ia.; Dr. Charles M. Franklin, Towson, Md.; Dr. Frederick L. Hills, Concord, N. H.; Dr. Richard H. Hutchings, Ogdensburg, N. Y.; Dr. William E. Lightle, New Hampshire; Dr. R. H. Moffitt, Mt. Pleasant, Ia.; Dr. Harold L. Palmer, Utica, N. Y.; Dr. Caroline L. Pease, Ogdensburg, N. Y.; Dr. J. N. Teeter, Utica, N. Y.

On motion of Dr. Gilman the Secretary was instructed to cast the ballot of the Association for their election and they were all declared elected.

IMPROVEMENT IN THE MEDICAL SERVICE OF PRISONS, REFORMATORIES AND PENITENTIARIES.

Dr. John B. Chapin, in offering resolutions urging an improvement in the medical service of prisons, reformatories and penitentiaries in order to promote the study of criminology, spoke as follows:

It has probably happened to many of the members of this Association to be called to examine persons charged with crime, as well as those who have been convicted of crime, and to make a report upon their mental condition, or to appear in court for the purpose of giving expert testimony at a trial. Referring to my own experience, while I have never sought this service, and have reluctantly accepted it when it has been performed, I may state that in the performance of this duty I have visited nine prisons and jails in several states—some of them on several different occasions. In every case there was an issue involving human life. Although I have made diligent inquiry of the physicians of these institutions about the medical history of the criminals and convicts examined, the attempt to secure this has been, as a rule, unsatisfactory and usually attended with absolutely negative results. I have always asked for access to medical records or histories, that might be a material aid in arriving at a decision, but have never been able to ascertain that any such case notes were made or required by the regulations of the prisons or jails. If the experience of others is similar to mine in such cases, the physician and expert must then expect to enter upon his examination of these cases wholly unaided by observations which should be impartially made and recorded, and to form his conclusions unaided by any facts and information he has a reasonable right to have in his possession.

It is sometimes too evident that the medical officer of these institutions is an unwilling witness, is without experience in the observation of the insane; or what is painful to observe, that he is intimidated or without such legal recognition in the discharge of his duties that he can perform them with proper professional independence and dignity.

Perhaps others having had a similar experience, have reached the same conclusions at which I have arrived. If such is the case, it is proper that we give expression to our views, and upon the larger relations which we think physicians of prisons and jails ought at this day to hold to these institutions and to penology.

This Association has on former occasions expressed its opinion in plain language on the separate care of the criminal and convict insane. It may again reaffirm its convictions, if it shall be deemed advisable, that the hospital for the insane is the most appropriate place for the care and treatment of the criminal and convict insane. It may go further, and in the interests of the welfare of the criminal and convict insane, for medico-legal purposes and to promote the scientific study of penology, properly urge that the standard of medical service in the penitentiaries and prisons of the country be elevated. We do not claim an unquestionable right to arraign the medical officers of these institutions, but there is a sentiment that their duties and prerogatives might be enlarged, that they should have them more clearly defined by laws or prison regulations, and that they be protected in the independent and conscientious discharge of their functions. We have an unquestionable right to demand that the interests of the insane in prisons, as elsewhere, shall be guarded if they are to remain under prison rules, if such practice is anywhere tolerated. We have a moral and professional right to demand that the medical status of the convict shall be determined by physicians, and not by managers, governors of prisons and wardens, assuming to act as experts. The following resolution is submitted for your consideration:

Resolved, That it is the sense of this Association that the medical service of all penitentiaries and prisons is of sufficient importance to justify for its proper performance the selection of well educated physicians of mature judgment, who, in addition to their fitness for the general practice of their profession, have some knowledge of insanity and familiarity with the insane; that the duties of a physician to a prison be so clearly defined by law that they may be performed without hindrance or intimidation; that he shall be permitted and required on the reception of a prisoner to make an entry of his mental and physical condition, and from time to time to make such additional records of all facts and changes as they may appear from his personal examination, and that these case records, together with special reports, at stated periods be submitted to the warden, superintendent, inspectors or managers of the prisons, and be open to examination on the order of a designated authority.

Resolved, That legislation be invoked, where practicable, and the co-operation of all prison managers and medical officers of prisons be urged to the collection of facts that will lead to a better understanding of the relation of insanity, and mental and physical degeneration, to crime and vice.

Resolved, That a committee of three be appointed by the President, to which shall be referred the foregoing resolutions, with the request that they make a report at the next annual meeting of this Association.

On motion the resolutions were adopted and referred to the following committee:

Dr. J. B. Chapin, Philadelphia, Pa.; Dr. Henry E. Allison, Fishkill Landing, N. Y.; Dr. Charles K. Clarke, Kingston, Ont.

Dr. A. B. Richardson, for the Nominating Committee, reported the selection of the following officers for the ensuing year:

For President: Dr. R. M. Bucke, London, Ont.

For Vice-President: Dr. Henry M. Hurd, Baltimore, Md.

For Secretary and Treasurer: Dr. C. B. Burr, Flint, Mich.

For Auditors: Dr. P. L. Murphy, Morganton, N. C., and Dr. S. B. Lyon, White Plains, N. Y.

For Members of Council for Three Years: Dr. J. T. Searcy, Tuscaloosa, Ala.; Dr. T. J. W. Burgess, Montreal, Can.; Dr. F. C. Hoyt, Clarinda, Ia., and Dr. H. C. Eyman, Cleveland, Ohio.

Dr. Richardson announced that the change in the office of Secretary and Treasurer was made because Dr. Hurd had expressed himself as being unwilling to continue that work longer, and said that the committee regretted exceedingly the loss of his valuable services.

The Secretary was instructed by vote of the Association to cast the ballot in favor of all the officers named.

Dr. F. C. Hoyt reported for the Auditors that the accounts of the Treasurer of the American Medico-Psychological Association and the accounts of the Managing Editor of the American Journal of Insanity had been examined and found correct in every particular.

Upon motion of Dr. Gilman the report was accepted.

THE AMERICAN JOURNAL OF INSANITY.

DR. DEWEY: I would like to make a statement in regard to the American Journal of Insanity. The members are aware that the Journal was purchased from the State Hospital at Utica three years ago and that the committee appointed for its management requested me to take charge of it and to edit it at Chicago, which I have done during the three years. The Journal has during that time been laboring under disadvantages, especially in the fact that its managing editor was exceedingly pressed with other duties and could not give it the time and attention he desired, and also that the

times have been unfavorable to a large income from advertising. It is, perhaps, a question whether the Journal ought to look to advertising for its income, but it has necessarily done so thus far, and if it is to continue to do so its advertising should be placed on some business-like basis. It is impossible for the editor to do the soliciting of advertisements, at least it is out of his line, although both Dr. Blumer, my predecessor, and myself did a great deal of work in that line.

In connection with the advertising in the Journal, I should say to the members that I think consideration ought to be given in making purchases to those persons in business of different sorts who advertise with the Journal, in the placing of your orders. I think those who advertise with the Journal should be given preference in your purchases, other things being equal.

The Journal started without any money in the treasury, but ended the first year with a balance of \$98. In the second year the income, together with this balance on hand, was \$2,086.22, and the disbursements were \$1,904.11, leaving a balance of \$182.11. In the third year the receipts were \$2,315.83, and the disbursements \$2,190.41, leaving at the present time \$207.58 in the treasury. There is now due from advertising \$280, all of which, except perhaps \$25, is good. The further income from subscriptions now due, and most of which is good, should be \$825.

On motion of Dr. Blackford a vote of thanks was tendered to Dr. Hurd for the conscientious manner in which he has discharged the duties of Secretary and Treasurer for the past five years.

AMENDMENTS TO CONSTITUTION AND BY-LAWS.

The Secretary distributed slips containing proposed amendments to the Constitution and By-Laws, which were then considered:

The first amendment, proposed by Dr. Wise, was adopted. It is as follows:

To insert in Article V, previous to the sentence beginning "The only persons eligible for Associate Membership," the following: "Physicians who are especially interested in the treatment and welfare of the insane are eligible to Active Membership."

The second amendment, proposed by Dr. Woodson, to strike out after the word "by" in line four of Article VIII, the words, "A Committee appointed for that purpose by the President," and insert in lieu thereof the words "the Council," was then taken up.

Dr. Brush called for the reading of the articles to which amendments were proposed.

Dr. A. B. Richardson opposed the amendment on the ground that it would give the Council the power to perpetuate itself and it might at some time become a close corporation.

Dr. J. B. Chapin also opposed the amendment, stating that the present Constitution had been adopted after very careful consideration and had served the Association perfectly.

Dr. Woodson defended the amendment, stating that the Council could not perpetuate itself and that the Constitution was not all that was needed.

Dr. Long supported Dr. Woodson's view, because he thought it would result in always selecting the best men obtainable for officers.

Dr. Blackford was opposed to any change which would take away the powers of the President.

Dr. H. A. Gilman also opposed the amendment, and stated that in looking back he could see no reason for the Association to be ashamed of any of the officers that had been selected by the present methods.

A vote was then taken and the amendment was lost.

A reconsideration of the vote on the amendment offered by Dr. Wise was then moved by Dr. Brush.

After a full discussion by Drs. Chapin, Wise, Brush, Woodson and Long, the motion to reconsider prevailed.

Dr. G. A. Blumer offered an amendment to the amendment proposed by Dr. Wise, as follows: "Physicians who by their professional work or published writings have shown a special interest in the care and welfare of the insane, are eligible to active membership," which was not accepted.

Dr. A. B. Richardson moved to lay the matter on the table until the next annual meeting.

Dr. Wise believed that this was out of order and that the Constitution required a proposed amendment to be disposed of. The Chair sustained Dr. Wise and announced that the motion to lay on the table was out of order and the amendment was now before the Association and would require a two-thirds vote of all present for its adoption.

A vote being taken the amendment was lost.

The following amendment proposed to Article III of the By-Laws, by Dr. Woodson, "No paper, except the President's address, shall exceed twenty minutes in length, nor discussion five minutes, and no one shall be heard a second time," was then considered and lost.

Dr. Blumer then gave notice of the following amendment: Insert before the words, "The only persons eligible" in Article V the following, "Physicians, who by their professional work or published writings have shown a special interest in the care and welfare of the insane, are eligible to Active Membership," which will lie over for one year under the rules.

Dr. Blackford introduced to the Association Dr. Conway, of Staunton, Va.

Dr. Wise introduced Hon. H. A. Reeves, of Albany, N. Y., a member of the New York Commission in Lunacy.

Dr. G. H. Hill introduced Dr. A. T. McDonald.

A paper, "Some Observations on the Use of Hyoscine," by Dr. Frank C. Hoyt, Clarinda, Ia., was then read, and discussed by Drs. Gilman, Brush, Godding, Woodson and Daniel Clark.

The following papers were read:

"Report of Cases with Remarks," Dr. R. J. Preston, Marion, Va.

"Hospital Records," Dr. R. L. Parsons, Greenmount, N. Y.

"Medical and Material Aspects of Industrial Employment for the Insane," Dr. G. A. Blumer, Utica, N. Y.

The meeting then adjourned to permit the members to attend the centennial celebration of the Maryland Hospital for the Insane at Catonsville, Md.

SECOND SESSION.

The meeting was called to order at 8 p. m. by the President, Dr. T. O. Powell.

The annual address on "Advances in Neurology and Their Relations to Psychiatry," was delivered by Dr. B. Sachs, of New York.

Upon motion the sincere thanks of the Association were tendered to Dr. Sachs for his able and profitable address.

THURSDAY, MAY 13, 1897.

FIRST SESSION.

The meeting was called to order at 10:10 a. m. by the President, Dr. T. O. Powell.

The following report was presented:

1. The Council would recommend for Active Membership, Dr. M. D. Norris, and for Associate Membership, Dr. Madeline Folkland.

2. The Council has selected St. Louis, Mo., as the place for the next meeting of the Association and the second Tuesday in May is fixed upon as the date of that meeting.

3. The Council would respectfully report that the following members of the Association have been selected as the Editorial Staff of the American Journal of Insanity: Dr. Henry M. Hurd, of the Johns Hopkins Hospital, Baltimore; Dr. G. Alder Blumer, of the Utica State Hospital, Utica, N. Y.; Dr. E. N. Brush, of the Sheppard Asylum, Towson, Md., and Dr. J. M. Mosher, of Albany, N. Y., formerly of the St. Lawrence State Hospital, Ogdensburg, N. Y.

4. The Council respectfully recommends to the Association that the Editorial Committee be empowered to use \$200 of the funds of the Association for the purposes of the publication of the Journal of Insanity should such expenditure be required.

The sections of this report were considered seriatim and were all adopted.

The following papers were read:

"Report of a Case," Dr. R. G. Wallace, N. Y., which was discussed by Drs. Daniel Clark and Meyer.

"Insanity Following Surgical Operations," Dr. Richard Dewey, Wauwatosa, Wis., which was discussed by Drs. Richardson, Henry M. Hurd, Worcester and Rohé.

"An Unusual Case of Meningitis," Dr. C. B. Burr, Flint Mich., which was discussed by Drs. Henry M. Hurd, Dewey, Woodson and Richardson.

AFTER-CARE OF THE INSANE.

Dr. H. M. Hurd: As Dr. Stedman is absent and his paper cannot be read, I would suggest that Dr. Dewey be asked to make some remarks upon the after-care of the insane.

Dr. Richard Dewey: The subject is one which I suppose every member of this Association, certainly all those who have had the responsibility of sending patients out into the world when they were wholly, or in some cases partly recovered, has felt to be a difficult one. This is particularly so where the patients starting again in life were indigent, perhaps without friends and home, as so many of those are who come to the public institutions for the insane. As a consequence of this, many patients relapse, as we know, and return again to the institutions. Their habits are, perhaps, such that their

insanity is again caused by excesses in alcohol or other vicious practices. Or the patient in a condition of destitution and unable to obtain work and without food and proper care, soon relapses. A large number, perhaps twenty-five per cent., who relapse and return to the institution, would not relapse, or at least not so soon, and probably might have years of usefulness before them, if they had some assistance. They ought to be sure of food and shelter for a limited time and a physician to look after them.

We know that a large amount of work has been done in making it possible for discharged prisoners to get started in an honest way of life, because they encounter so great a prejudice. I believe there is just as much, if not more, difficulty for an insane individual to get back into some useful avocation. These facts have led to efforts for the after-care of the insane, both in France and in England, but no systematic effort in this direction has been made in the United States. A society in Paris provides buildings and employment for forty patients and there are always about forty individuals in that institution who have been discharged from the public insane asylums. None can remain longer than two or three months, but during that time they practice or are taught in the shop certain simple kinds of work. This work of the "Société de Patronage," for the insane, as it is called, has been found to be so beneficent, that it has been approved by the government, whose representatives have recommended appropriations to supplement it. In England there is also a house for the care and aid of recovered patients. In this country nothing has been done except in a desultory way. I remember that when I had a large number of patients to be discharged from an institution, I often had to do much work in endeavoring to find friends for them. Often times the worst opponents of these patients are their own families or friends. Those of limited intelligence and good will often oppose very positively the return home of a relative of their own. They believe the condition to have been a hopeless one and wish the individual to stay the rest of his life in the hospital.

As I take it, what needs to be done at present is to bring this subject to the attention of those who have little knowledge of it. One of the best ways to do this, I think, would be to present the subject at the National Conference of Charities. This large and influential body from every part of our country meets this year in Toronto, and I desire to lay before the Association this suggestion, that from the membership of this Association a committee be appointed with instructions to be present at the Toronto meeting in July to bring this matter before the Conference of Charities. Before leaving Chicago I had a letter from Miss Jane Addams, of Hull House, in which she said she would take great pleasure in helping this movement along and would speak for it at Toronto. Her help would be of great value. I will write out a resolution to cover the question.

Dr. H. M. Hurd: I would state that Dr. Stedman is chairman of a similar committee on the part of the American Neurological Society. There should be no division of interest in this matter. We should appoint a committee to co-operate with the committee of the Neurological Society to bring this before the Conference of Charities or any other body competent to consider it.

Dr. Dewey: I will gladly accept the suggestion and offer the following *Resolved*, That it is the sense of the American Medico-Psychological Association that the after-care of the insane is worthy of earnest endeavor and that this Association requests the President to appoint a committee to co-operate with a like committee of the American Neurological Society in the furtherance of this object and especially asks this committee to present the subject at the National Conference of Charities at its meeting in Toronto the present year.

Dr. G. H. Hill: I think this is a very important question for us to consider. It is as practical as anything presented to us for it looks to the future welfare of patients discharged from hospitals and to an extent prevents their having to return. The more generous the provision made by a State for care of the insane, the more insane there are to be cared for. There is no difficulty in filling institutions provided by the State. Likewise the more kindly and skillfully the patients are treated, the more tendency there is on the part of relatives to send their friends to the hospital early; but more than this is true, the better the patients are cared for and the more entertainments they have, the more reluctant they are to leave the hospital. It is often said by visitors that these people have better beds than they have at home, better bread than they can make at home, and (I live in an agricultural State) the farmers do more dancing at the hospital than they do at home. Now, I think one way of providing for after-care is to hold the physician responsible for the after treatment of the insane individual whom he sends to the hospital. We have a commission in insanity, appointed by the governor, which remains a long time in office. The officers of hospitals, I think, should give these commissioners and physicians sending patients to the hospitals notice that it is their duty to look after a patient when he is discharged. We could notify them that the patient is about to be sent out and the commissioners should ask those who live near him, as a matter of charity and Christian duty, to assist him in getting employment and in making him welcome and contented at home.

Dr. W. W. Godding: It seems to me that we have here a practical question, second in importance to none that has been brought before us. While I sympathize fully with Dr. Hill in his statements and have heard the remarks of those friends who say, "It is so pleasant that I would like to stop here myself," I know the utter hollowness of such statements. I think none of us would wish to exchange brains with our unfortunate friends. It seems to me here is an opportunity for our Boards of Charity to take up a practical work. We know the work that has been done to lead thieves, burglars, etc., into honest life and we also know the blight that passes over a man with insanity. Here within two months I had a letter from a man who had taken a girl into his family for service, which stated that she was a most excellent girl, but he had just learned that she had once been in an institution for the insane, and if this were true he did not wish to risk the lives of his children with her. These poor people, going out without friends, are certain to fall by the wayside and to return again to the sumptuous hospital, unless we find some way to give them encouragement until the time when we can reasonably say they are safe. I will gladly co-operate

with anybody that will help this matter along. I do not mean by this that I want to be appointed on the committee, for I expect to be otherwise engaged at that time in attendance upon the British Medical Association, but I hope this will be taken up and acted upon by the Conference of Charities at that time.

Dr. H. A. Gilman: It seems to me that this question in all its importance leads along the lines of Dr. Blumer's paper of yesterday in the matter of employment for patients in our hospitals. The limited experience we have had in our hospital in the matter of industrial employment has convinced us that much can be done to aid a patient who is convalescent to become self-supporting without much care after leaving the institution. We have, in a small way, started shops in our institution for the making of boots, shoes, brooms, brushes and tinware, and we have found an eagerness to do this work on the part of the patients that we did not even anticipate. We have with us patients who have within the past year learned the art of making shoes, of making good tinware, quite as good and perhaps better than we buy at extortionate prices, and brooms and brushes which cannot be excelled. Each patient can learn at least one of these useful employments and can be prepared to make a living for himself, and it seems to me that if this is true a great point has been gained towards preparing him for self-support after leaving the hospital. They are fortified at least in one direction, and some of them in several lines of employment, and may become sufficiently skilled to command a good position in any shop. I was very much interested in Dr. Blumer's paper yesterday. I believe it ought to give us a greater impetus to work in this direction. I hope we shall hear from Dr. Hoyt on this subject, as he is doing perhaps as good work as any other man in this country and has had a very extended experience in this direction.

Dr. Hoyt: This subject is indeed an interesting one, for both the questions of work for the insane while in hospitals and the care of the insane after leaving the institutions, are of great importance. I am inclined to think, however, that the question of provision for the care and treatment of the patient after leaving the hospital is more important to those who have charge of institutions adjacent to large cities, than to those of us who derive our patients almost exclusively from the agricultural districts. I have had very little trouble in properly locating my patients when they are to be discharged. Occasionally, however, I have been compelled to retain patients for a month or more until I could find some one who would give them homes and employment. I can readily see how vexed a problem this becomes in large cities where, under the most favorable circumstances, many thousands are made to eke out a miserable existence and only the shadow of a livelihood is obtained. In such places, and under such untoward circumstances, the recently discharged patient is at a double disadvantage, on account of the feeling of fear which many people have about employing persons who have been insane, or are more or less defective mentally. I think the greater portion of our patients who are discharged as recovered should be discharged as "recovered with mental defect." Indeed, it is very questionable whether we have any considerable proportion of true recoveries.

We had in the State of Iowa a French community formed by a better class of the peasantry about the time of the Franco-Prussian war. They were non-belligerent and socialistic in tendencies. They came to this country and formed a socialistic community, in which the individuality of the members was destroyed and the management of the affairs of the community vested in a committee. Some years ago the community dissolved and members were thrown upon the world to take care of themselves. These men were unusually well educated and of more than average ability and yet the dissolution of the community was the cause of several cases of insanity which came under my observation. I have one now under my care and I often wish that I could write with the ease that he does. This patient gets well in a few weeks and I have sent him home frequently, but he comes again within a few weeks suffering from profound melancholia. He states that when he leaves the institution and its protecting care and is confronted with the problem of taking up with the world a battle for bread, he gives up and would rather die. It is this sense of solitude, this fear of the world, which overwhelms many of our patients and drives them to our doors again, begging for our protection.

Industrial treatment is to me the most important method of treatment now in use. It is not new, as indeed there is very little new in the care of the insane. Some months ago I obtained from Dr. Blumer a complete set of the Transactions of this Association and I have profited much by the experience and lessons of the old masters in our specialty. In reading back to a period before I was born, I was astonished to find that the drilling of patients in military maneuvers and the employment of the insane were practiced then. To the younger men in our Association, however, belongs the credit of reviving many of these methods and of bringing them to a much higher degree of utility. Industrial pursuits of the proper kind prescribed for the patient with the same care and thought as are drugs, are potent remedies. Work prevents introspection, drives away melancholy, substitutes a healthy mental process for a morbid one, and so keeps the patient from indulging in his delusions or other pernicious habits. At our institution we employ the greater proportion of our patients and find that it not only hastens restoration, but where this result is impossible, makes the patient more tractable, neater and much happier. As to its value from an economical view, I will not speak, for this consideration should not concern us. I feel it a duty as imperative to furnish employment for my patients as I do to buy them drugs.

The resolution was unanimously adopted.

Adjourned.

SECOND SESSION.

The meeting was called to order at 3 o'clock by the President, Dr. T. O. Powell.

The Council recommended the election of Dr. William Searl, of the South Dakota Hospital at Yankton, Associate Member, to Active membership.

The report was accepted and the Secretary instructed by motion to cast the ballot of the Association for Dr. Searl.

The Secretary announced that the ballot had been cast.

The following papers were presented:

"Katatonia," (read by title) Dr. Frederick Peterson, New York, Dr. C. H. Langdon, Poughkeepsie, N. Y.

"The Private Hospital for the Insane," (read by title) Dr. C. F. MacDonald, New York.

"The After-Care of the Insane," (read by title) Dr. Henry R. Stedman, Boston, Mass.

"Nursing in State Hospitals and Training of Nurses," Dr. Peter M. Wise, Albany, N. Y., which was discussed by Drs. H. M. Hurd, Tuttle, Eyman and A. W. Hurd.

"Another Chapter in the History of the Jurisprudence of Insanity," Dr. Daniel Clark, Toronto, Ont., which was discussed by Drs. Godding and Allison, Hon. A. J. Mills, and Dr. H. M. Hurd.

Adjourned.

FRIDAY, MAY 14, 1897.

FIRST SESSION.

The meeting was called to order by the President, Dr. T. O. Powell, at 10 o'clock.

The following paper was read:

"The Constructive Forces," Dr. R. L. Parsons, Greenmount, N. Y.

The President requested Dr. John B. Chapin to take the chair.

Dr. Hoyt: The Committee on the Hack Tuke Memorial fund desires to make the following report:

The sum of \$170.50 was collected (a list of subscribers being herewith appended) and \$6.00 was expended for printing and postage. The balance, \$164.50, (£38 7s. 2d.) was sent to Dr. Henry Rayner of London, who acknowledged the receipt of same in the following letter:

NO. 2 HARLEY STREET W., 13 March, 1897.

DEAR DR. PILGRIM: I am greatly indebted, as I am sure the Committee of the Hack Tuke Memorial will also be, to you for the trouble you have taken and the handsome addition you have made to the funds.

I regret that the total amount collected is so small that the Council are inclined to let it be employed in the upkeep of the library which Mrs. Tuke has handed over to the charge of the Medico-Psychological Association, and to increase the same by purchase of books as far as may be.

From the views of Mrs. Tuke and from my knowledge of him and from his essentially literary turn, I do not think that a more fitting form of memorial could be found for him.

Again thanking you, believe me, with sincere regards,

Yours faithfully,

H. RAYNER.

D. HACK TUKE MEMORIAL FUND.

LIST OF SUBSCRIBERS.

C W. Pilgrim.....	\$10 00
J. F. Courtney.....	5 00
T. E. Bamford.....	5 00
C. H. Langdon.....	5 00
I. G. Harris.....	5 00
Henry M. Hurd.....	5 00
Richard Dewey.....	10 00
Emma Putnam.....	5 00
H. L. Palmer.....	5 00
W. C. Gibson.....	5 00
J. N. Teeter.....	3 00
George H. Torney.....	2 50
E. C. Gibney.....	2 00
C. W. Page.....	10 00
E. H. Howard.....	5 00
T. J. W. Burgess.....	5 00
George H. Rohé.....	2 00
P. M. Wise.....	5 00
R. H. Hutchings.....	1 00
Frank G. Hyde.....	1 00
Walter M. Brinker.....	1 00
Sydney D. Willus.....	1 00
W. L. Babcock.....	1 00
W. G. Cooper.....	1 00
W. H. Kidder.....	1 00
C. K. Mills.....	5 00
R. L. Parsons.....	5 00
O. M. Dewing.....	3 00
H. P. Stearns.....	7 00
S. F. Mellen.....	5 00
Charles G. Wagner.....	5 00
S. H. Talcott.....	10 00
C. C. Eastman.....	5 00
C. G. Hill.....	5 00
G. H. Hill.....	6 00
Frank C. Hoyt.....	5 00
H. A. Gilman.....	5 00
F. O. Jackman.....	1 00
F. T. Stevens.....	1 00
Madeline Folkland.....	1 00
	<hr/>
	\$170 50
Less printing and postage.....	6 00
	<hr/>
	\$164 50

Respectfully submitted,

CHAS. W. PILGRIM, *Chairman.*
FRANK C. HOYT.
CHAS. G. HILL.

On motion of Dr. Burr the report was accepted, and the committee discharged.

The Chair announced the appointment of the following committee to co-operate with a committee of the American Neurological Society to promote the after-care of insane patients, in accordance with the resolution of Dr. Dewey adopted at a previous meeting, viz: Dr. Richard Dewey, Wauwatosa, Wis.; Dr. G. A. Blumer, Utica, N. Y., and Dr. Dan'l Clark, Toronto, Ont.

Dr. George H. Rohé called attention to the efforts which had been made to secure a memorial to Dr. Benjamin Rush.

After discussion, upon motion of Dr. Dewey, a committee was appointed for the purpose of bringing this matter to the attention of the members of the Association.

The following paper was read:

"The Commitment and Detention of the Insane, with Especial Reference to the Laws of Maryland," Dr. Edward N. Brush, Towson, Md., which was discussed by Drs. George H. Rohé, Wise and Lee.

Also the following:

"Local Myxedema in the Negro," (read by title) Dr. H. J. Berkley, Baltimore, Md.

The following report of committee was presented:

To the American Medico-Psychological Association:

Your Committee to which was referred by the Council the pleasant duty of giving formal expression to the appreciation felt by all members of the American Medico-Psychological Association of the valuable labor of Dr. Richard Dewey, the retiring editor of the American Journal of Insanity, desires in this public manner to place upon permanent record its hearty thanks for the fidelity and ability with which he has discharged the varied and difficult duties of the position during the past three years. He has labored under many difficulties and has wrought out permanent results for the Association. It is most fortunate that the American Journal of Insanity has had his able direction and successful management at this formative period in its history. The Association regrets that Dr. Dewey finds it impossible to continue a connection with the Journal, which has proven so beneficial.

Your Committee would ask authority to procure at an expense not to exceed \$100 a fitting testimonial as a suitable material expression of gratitude to be publicly presented to Dr. Dewey at the next annual meeting of the Association.

T. O. POWELL,
J. B. CHAPIN,
HENRY M. HURD,
Committee.

On motion of Dr. Brush the report was unanimously adopted.

Dr. A. B. Richardson: I desire to offer the following:

Resolved, That the thanks of the Association are due and are heartily extended to the Committee of Arrangements for their untiring efforts for the entertainment of the members of the Association and the many courtesies that they have individually extended.

Resolved, That the Association is indebted to the Medical and Chirurgical Faculty of Maryland for the use of their hall for the meetings of the Association.

Resolved, That the Association desires hereby to record its appreciation of the generous and most enjoyable receptions and entertainments accorded by the Trustees and Officers of the Maryland Hospital for the Insane, and of the Sheppard Asylum, and of the Johns Hopkins Hospital and Mount Hope Retreat.

Resolved, That the Association desires to express its thanks also to the members of the press for their courteous treatment and the complete reports made of the proceedings.

The resolutions were unanimously adopted.

The following report was presented:

To the American Medico-Psychological Association:

Your Committee on Statistical Tables would respectfully report that but one or two suggestions in respect to the tables presented at a previous meeting have been received—these less in the line of suggestion, perhaps, than in disapproval of the tables in their entirety. Under the circumstances the Committee assumes that the tables are reasonably acceptable to members of the Association.

The Committee therefore asks that the Association give its endorsement to these tables and recommend them in the interests of uniformity to institutions publishing reports. It is not the intention of this report to place upon members any constraint to use the tables contrary to their judgment, but rather to invite the study of the tables and their tentative employment.

Very respectfully,

C. B. BURR,
HENRY M. HURD,
P. M. WISE,
Committee.

On motion of Dr. Edwards the report was accepted and adopted.

Dr. Wise moved that Dr. A. E. Macdonald be elected to represent this Association at the twelfth International Medical Congress at Moscow and at the meeting of the British Medico-Psychological Association for 1897.

Which motion unanimously prevailed.

The Chair announced the appointment of the following as members of the Committee on the Rush Memorial:

Drs. Rohé, of Maryland; Curwen, of Pennsylvania; Searcy, of Alabama; Burgess, of Quebec; Blackford, of Virginia; Richardson, of Ohio; Edwards, of Michigan; Gilman, of Iowa; Bancroft, of New Hampshire, and Wise, of New York.

The President: I desire to thank the members of the Association for their kind forbearance in my many shortcomings in the office that you have given me, and thank you for the honor you have conferred upon me.

The Association then adjourned to meet in St. Louis, May 10, 1898.

C. B. BURR,
Secretary.

FINANCIAL STATEMENT.

RECEIVED.	EXPENDED.
From balance May 22, 1896, \$895 72	For printing Vol. 2 of Transactions, \$827 72
Dues from Active Members, 955 00	" Printing Vol. 3 of Transactions, 404 89
Dues from Associate Members, 142 00	" Lithographs, Plates and reprints, 51 00
From sales of Transactions, 14 25	" Services of Stenographer and Type Writing, 121 12
From sales of Photographs, 9 00	" Printing Circulars, Programmes, etc., 68 85
	" Postage, 32 87
	" Stationery, rubber stamps, etc., 32 10
	" Telegraphing, 1 78
	" Freight and Express, 11 75
	" Services of Janitor, Baltimore meeting, 5 00
	Balance in National Exchange Bank, 464 94
<u>\$1,515 97</u>	<u>\$1,515 97</u>

HENRY M. HURD,
Secretary and Treasurer.

PRESIDENTIAL ADDRESS.

A SKETCH OF PSYCHIATRY IN THE SOUTHERN STATES.

By T. O. POWELL, M. D.
Milledgeville, Ga.

"The law of progression is probably a law of nature of slow development."—*Moses Sheppard, 1857.*

Members of the Association, Ladies and Gentlemen:

In suggesting a subject for this address your committee stated that "Due credit has never been given to the movement which brought about the erection of the buildings for the insane at the South, and it seems desirable that some special reference be made to the work done by pioneers in that field."

The theme thus briefly indicated is most inviting, and the subject, as must be confessed, has been too long neglected. But not of my own volition, nor without hesitation, would I assume the rôle of historian of the rise and progress of a vast system of charities in the fifteen commonwealths of the South. As this meeting is held in the Southern metropolis especially renowned for her fostering care of the insane, the occasion seems to demand that the subject proposed by the committee be taken up and dealt with comprehensively and, so far as possible, according to its high merits. But it is scarcely to be expected that, within the narrow compass of an address such as this, full justice can be done a subject at once so vast in extent, so fertile in material, and so full of tender memories of self-sacrificing men and women long since gone to their reward, leaving us heirs of amplest inheritance.

It is due, however, to the worthy founders of these beneficent institutions that adequate recognition be made even thus tardily, but many of them have left no record other than their good works, thus reminding us that "history makes haste to record great deeds, but often neglects good ones."

While it is thus incumbent upon me to pay due tribute to the illustrious dead, yet good taste requires that little be said of their living successors, whose own work will in time speak for them. I am none the less aware, however, that men now actively engaged in asylum work at the South have seen far more of improvement than did their worthy predecessors.

In attempting to comply with the request of your committee I have been sadly conscious of the deficiencies and shortcomings of my essay. And while I have endeavored to pay due tribute to many honored heroes I have failed to trace, even in my own State, the fountain-source of the earliest hospital movement. Miss Dix, more than any other, was the leading spirit in many Southern States, as she was elsewhere in America and abroad. But before Miss Dix the good work had begun in Virginia, Maryland, Kentucky, South Carolina and Georgia.

For the *subject matter* of my address I am indebted to many sources. In some instances I have been fortunate enough to discover living descendants, relatives or friends of the men whose achievements I have attempted to transcribe. They have aided me with brief biographies. While I cannot here name all who have thus placed me under obligation, I may be permitted to single out from their number as especially worthy of our gratitude, Miss Mary Galt, of Virginia.

Many asylum physicians, both active and retired, have given me freely of their knowledge of their predecessors, but with the prevailing modesty of their class, they prefer to be nameless here. Their tributes, however, have shown a sincerity of admiration for the illustrious dead which we too must share as we reverently bow with them, feeling that we are standing on sacred ground.

Information has been derived from not a few collections of forgotten hospital reports. Singly, it is true, many of them are of small import; probably they were not read by the legislators for whom they were ostensibly prepared, yet taken together for a series of years, what an epitome of human history they unfold; now of high aspiration and loyalty of purpose, of hope and undaunted courage; now of halting public opinion, of disappointment, of defeat, even, but the grand total of it all being a steady progress toward better things, and all the world made brighter because these men have lived.

"The hero is not fed on sweets,
Dally his own heart he eats;
Chambers of the great are jails,
And head-winds right for royal sails."

It is my desire to pay tribute to the memories of a group of men whose lives were devoted with singleness of purpose to our calling, but whose remoteness from each other, and from the great centers, tended to dim, if not to obscure their light and their true worth. Many of them were men of recognized character, ability and experience, but they were averse to taking prominent part in either local or national gatherings.

It has been asserted that the South has made history, but her sons have neglected to write it. What is true of the whole, is true also of our part, for our pioneers and veterans, by reason of their exacting administrative duties, failed to a large extent to put in enduring form of monograph or scientific paper the results of their observations. But scattered through neglected reports and medical journals may be found by the diligent inquirer much valuable information and many useful suggestions.

Primus inter pares was Dr. John M. Galt, the younger, of Virginia. He was generally recognized as the most notable writer on neurology and insanity among the earlier generation of Southern alienists. Searching the literature on the treatment of madness, he compiled a work on that subject now almost forgotten. Dr. Galt, Dr. Stribbling and Dr. Richard S. Steuart were conspicuous examples of the earlier alienists who lived for the good of the insane and the advancement of psychiatry.

In passing it is here worthy of mention that the idea of organizing this Association was first conceived at Staunton, Va., by Dr. Stribbling and Dr. Woodward of Massachusetts. The project of such an organization having met with the hearty approval and co-operation of Drs. Kirkbride and Awl, the famous original thirteen were first convened in Philadelphia, October 16, 1844. The history of the subsequent development of the Association has so recently been reviewed as to be fresh in the minds of you all.

Of a later period our most distinguished writers were Dr. Peter Bryce, of Tuscaloosa, and Dr. John H. Callender, of Nashville.

THE INFLUENCE OF MISS DIX.

No record of Southern lunacy administration would be complete without paying homage to the memory of Miss Dorothea L. Dix, the most deserving of sainthood of all the heroes and heroines of this marvelous nineteenth century, for whom we find no human parallel, save only John Howard.

Since 1845, when she went on her self-appointed mission as far south as Louisiana, her influence has been felt in every Southern State. In 1849 the site of the Hospital at Raleigh, N. C., was named in her honor, and only last year a fund she had long ago collected was instrumental in enabling the South Carolina Hospital to acquire an adjoining estate—a step that in importance is second only to the foundation of the institution.

Upon finding by her own laborious inquiries that an asylum was needed in any community she marshaled her facts so pathetically and forcibly that they appealed to the most indifferent. In presenting to State legislatures her various memorials she sought out the men of greatest ability and influence to champion the cause she had made her own. Having once won the leaders, as well by her womanly kindness and sympathy as by her arguments, she left the cause in their hands. Though sometimes at first unsuccessful, she was indefatigable in fulfilling her holy mission, and in the end always won.

To her personal influence is due the establishment or development of hospitals for the insane in ten Southern States: Maryland, North Carolina, South Carolina, Georgia, Alabama, Mississippi, Louisiana, Tennessee, Kentucky and Missouri, as well as at Washington.

A few very brief instances will illustrate the high degree of appreciation in which she was held. Upon the passage of the bill reorganizing the Maryland Hospital, Dr. Steuart, of Baltimore, wrote her: "Most cordially do I congratulate you on *your* success, because I am well convinced that no other means than yours could have produced this result.

The beautiful site of the Government Hospital for the Insane was finally obtained through her earnest persuasion from its owners, who reluctantly yielded up their home rather than let selfish motives prevent her work for the unfortunates.

In 1859 Miss Dix received a most cordial welcome in Texas,

as is instanced by an innkeeper who said, in refusing remuneration: "Make sure there's a home for you in every house in Texas." Thus this latter-day saint journeyed through our Southland, starting the work here, stimulating it there, aiding by criticism, encouragement and advice where each was needed. The results of such victories of peace as she achieved shall throughout all time be felt in the remotest hamlets of our section. We know that she lies buried in the beautiful cemetery at Mount Auburn, near Boston, but if we seek her monument, then must we visit the noble edifices for the insane in every State.

Before entering, however, upon a history of individual institutions, it may be proper to take a survey of the whole field. It is well to recall that at the close of the last century there were but five public asylums in England, and one public and three corporate asylums in the United States. As will appear, the first asylum exclusively for the insane in the United States was established at Williamsburg, Va., in 1769, and with that single exception there was no provision made for the insane, especially in the South, for many years. In making this statement I am not unmindful of the existence of a separate ward for the insane in the Pennsylvania Hospital at Philadelphia, dating from 1751.

There has been brought to my attention by my friend, Dr. Babcock, of South Carolina, some facts connected with an effort made to provide for the insane in that State which indicate the establishment in Charleston in 1762 of a mad-house, as it was called, but of this institution we have no satisfactory history, and must of course assign to the Virginia Hospital the position which I have already given it.

In 1797, the year of the incorporation of Baltimore town as a city, some of its influential citizens, led by Mr. Jeremiah Yellot, established a hospital for the relief of indigent sick persons and for the reception and care of the insane. This was first called "The Public Hospital," then "The Maryland Hospital," and in 1838 became, by resolution of the General Assembly, "The Maryland Hospital for the Insane."

In passing, it may be well to remember that no community, American or foreign, can point with absolute pride to its history in the care of the defective classes. The proudest and wealth-

thiest States have reason to bow with shame for errors and failures of duty to the insane. With all the glorious progress of the century just closing no State can yet feel justified in claiming to have fully discharged its obligations to its dependents and defectives.

The history of the care of the insane in our section of the country shows a gradual process of evolution which may be studied advantageously since it explains many questions and problems that separately are not easy to comprehend.

For convenience an attempt will be made to divide the subject into periods, although, of course, no separate line of demarcation can be drawn as applicable to the whole section. For, while one State has made rapid advances, its neighbor may have remained stationary through the indifference or inertia of its people.

First Period.—In colonial days the methods were necessarily primitive. Ideas of demoniacal possession held sway. The treatment was little less than barbarous. The insane were chained in strongly-constructed houses. Paupers were supported by assessment upon the parish in which they lived. In some colonies the laws recognized and made provision for insane slaves. The prevailing conception was to protect the sane, and the insane were therefore neglected.

Second Period.—About the time of the revolutionary war evidence of a better spirit appeared, in that the insane were placed in almshouses, thus passing further under the jurisdiction of the commissioners of the poor. Laymen had official charge of both paupers and insane. In the larger communities, especially in cities, the insane were sometimes assigned to wards and outbuildings of general hospitals. The common designation of these receptacles was "mad-houses," and their inmates were held in great contempt. During this period probably little was done in the way of medical treatment, and the insane were under charge of brutal keepers. In some of the States in the early part of the century the insane were also boarded out in private families at a nominal rate determined by the judges of lower courts, and paid by the commissioners of the poor.

Third Period.—In the third decade of the century, asylums for the insane were founded in Kentucky and South Carolina, a second institution was established in Virginia, and the Maryland

Hospital was reorganized. The purpose was partly humane and partly economic. The usefulness of the asylum at Williamsburg had long been demonstrated, and its fame spread abroad. The writings and teachings of Dr. Benjamin Rush were also a factor. One or more physicians were naturally found among the leading spirits for establishing asylums. These institutions were built in large towns, and were massive structures. They admitted not only the insane but idiots and epileptics. Only the most violent were committed. The asylums were under charge of lay superintendents—in some instances of not a high order of intelligence. Physicians paid visits as the superintendents thought it necessary. The prevailing ideas were altogether custodial; restraint was common, and violent methods of repression were in vogue—shower-baths, tranquilizing chairs, bleeding, vomiting, etc.

The first asylums were planned on a very small scale, and the provisions made for their support were exceedingly meagre; the rigid adherence of the Southern legislatures to the doctrine that the State should do for the individual nothing which he could do for himself, led the legislatures to aim at making the asylums self-supporting; that is, the States erected the buildings, but the county commissioners of the poor were expected to pay for the support of their paupers. Payment was required of all who were able to pay. The result of this effort was very unsatisfactory, but it was not abandoned for many years. The official positions were not sought for.

Fourth Period.—During the decade following 1830 both Tennessee and Georgia established asylums. About 1840 lay superintendents began to give place to “resident physicians” or “medical superintendents,” although in some places visiting physicians were continued. Restraint was modified. County care still prevailed, and the profits from pay patients were applied to reducing the expenses of the paupers. Curative treatment began, although the custodial idea was not abandoned. The number of patients even in populous States was small because the prejudice to asylums still prevailed, and county officers encouraged the admission of the violent only. The resident physician was often purchasing and disbursing agent as well as medical adviser. In this period asylums were established in Louisiana and North Carolina.

Fifth Period.—The decade following 1850 was one of great activity in asylum construction at the South. At the beginning of this period American asylums were said to lead the world. State Hospitals were established in Missouri, Mississippi, Texas and Alabama, and a second asylum in Kentucky. Dr. Kirkbride's influence was manifest in the plans of construction, and Drs. Galt and Stribbling of Virginia were the recognized leaders in treatment, management and discipline. County care was still continued. The number of patients was so small that no superintendent required more than one assistant physician. A few insane negroes were under care in Maryland, Virginia, South Carolina and Louisiana. The only Southern States not provided with asylums in 1860 were Florida and Arkansas.

SOUTHERN HOSPITALS DURING THE LATE WAR AND RECONSTRUCTION PERIOD.

The ordeal that asylums passed through during the late war and the period of reconstruction can now be but faintly realized. The demand for soldiers called every able-bodied man to the front, which made serviceable male attendants hard to secure. Clothing was scarce, and worse than all, the food supply was so reduced that often real want stared the hospitals in the face; but through the wondrous providence of God, and the untiring efforts of the self-sacrificing officers, the patients were fed, clothed and sheltered. Upon the close of the war the overthrow of State governments added to the disorder. Another danger menaced the asylums in some of the Southern States, in that political interference appeared and proved hurtful to the institutions. It is but due, however, to some State governments during the reconstruction days, to say that they had hearts to sympathize with this afflicted class, and recognized the fact that politics should not interfere with the administration of hospitals for the insane. But the times were hard, State credit was low, and everything was uncertain. The administrative officers lived anxious and laborious days; but they stood bravely to their posts, and did what they could for the care and welfare of their respective charges, and at last came safely out of the storm. We cannot over-estimate the credit due those noble humane men for their inflexible fidelity to their trust

during the time of this turmoil. I have no knowledge of any hospital for the insane, save one, being closed either during the war or the reconstruction period.

VIRGINIA.

This State now has four asylums for the insane—three for whites and one for colored. The names of these asylums were changed in 1894 to State Hospitals.

In 1769 the House of Burgesses in the colony of Virginia provided for a building for the insane at Williamsburg, the capital of the colony. The institution was officially called "The Hospital for the Reception of Idiots, Lunatics, and Persons of Insane and Disordered Minds." It was in dimensions 100 feet by 38 feet. At a meeting of the Court of Directors September 14, 1773, the hospital was examined and found finished. Mr. James Galt was appointed keeper, and "after he agreed to accept the said office, the court delivered the charge of the said hospital to the said James Galt." The keeper had entire charge of the hospital subject only to the Court of Directors—as the superintendent now has. He attended to all the business, expended all money, and the visiting physician was sent for only when the keeper ordered that he should be.

Mr. James Galt, the son of Mr. Samuel Galt, was born in 1741, probably at "Strawberry Banks," a farm near Old Point Comfort owned by his father. He had had the advantages of education and travel, and was noted for his integrity, and later for his patriotism. He held the position of keeper until the hospital was suspended from lack of funds during the revolutionary war, and when the institution was reopened after the war he was reappointed, and remained in office until the time of his death, December, 1800. He was succeeded as keeper by his son, Mr. William T. Galt, who held the office for twenty-six years, to the time of his death. He was educated at Williamsburg, and was noted for his kindness to the patients and his associates. He was mayor of Williamsburg when Lafayette made his second visit to America, and received him officially when he visited the old city.

In January, 1774, Dr. John de Segueyra was chosen a member of the Court of Directors, and it seems was the visiting physician. In 1784 the Court of Directors met for the first

time after the war, passed resolutions as to repairs to be made to the hospital, an enclosure put up around it, etc. From the records it seems that no patients were received into the hospital after it was suspended until after the Court of October, 1786, at which time Mr. James Galt was reappointed keeper and Dr. John de Segueyra appointed visiting physician. In the meantime the few remaining patients had been taken care of in the town.

In 1789 the Court of Directors paid Drs. Galt and Barrand a bill—probably for attendance; in absence of Dr. Segueyra—and in 1791 Drs. Galt and Barrand, who practiced together, were appointed visiting physicians, and Dr. Segueyra retired on account of poor health. Dr. Barrand had been physician's mate to Dr. John M. Galt in the war, and afterwards they practiced together. After a few years Dr. Barrand moved to Norfolk, and Dr. John M. Galt still held the position at the hospital, assisted by his son, Dr. Alexander D. Galt. Dr. John Galt was younger brother to Mr. James Galt. He was born in Williamsburg in 1744, educated at William and Mary College and received his medical education at the medical schools of Edinburgh and Paris. He served for a time in the Hudson Bay Company, was associate physician in the asylum at Williamsburg for many years, and had a large private practice. He was a prominent medical officer during the revolutionary war, was senior field surgeon at the end of the war, and had charge of the sick soldiers for some time after the war in the hospitals established in Williamsburg. He compounded and gave to the patients all medicine after he was appointed attending physician to the hospital.

Dr. Alexander D. Galt, the son of Dr. John M. Galt, was born in 1771 in Williamsburg; was educated at William and Mary College, and at Oxford, England, and received his medical education in London, being the private pupil of Sir Astley Cooper, and attending lectures and the hospitals there. He was associated with his father as visiting physician to the Hospital for the Insane in Williamsburg. He introduced what he called the "gentle treatment" for the insane—endorsing Pinel. His private practice was even larger than his father's. He was a philanthropist, and "went about doing good." The poor thought he was paid by the State for attending them. He on

one occasion refused half of the largest fortune in Virginia in order to stay all night and nurse a poor, sick, drunken, free negro who had no one to take care of him. He also prepared and gave to the hospital all medicine used. He, like his father, was for many years one of the Board of Directors of William and Mary College. He was a distinguished army surgeon in the war of 1812.

DR. JOHN M. GALT, THE SECOND.

Dr. John M. Galt, son of Dr. Alexander D. Galt, was born in Williamsburg, and educated at William and Mary College and at the medical schools in Philadelphia. He succeeded his father as physician to the hospital. The Board of Directors waited a number of months until he had graduated to offer him the position, so well was his unusual ability recognized and appreciated, although he was so young. He was born in 1819, and when in July, 1841, he was appointed superintendent he was only twenty-two years of age. He was the first *Medical Superintendent*, and brought many changes to the institution. He took many of the duties that formerly belonged to the keeper. He introduced all the gentle treatment for the insane—probably more than ever had been used for them in any institution in the world. He, like the other members of his family, was philanthropic. He refused many times to allow his salary to be raised, fed many patients from his table, etc. He greatly loved and pitied the patients and when, in May, 1862, the Union troops came and took possession of the town and hospital, and the guard at the gate refused to allow him to enter, his anxiety about the patients was so great that he could neither eat nor sleep for several days and nights, and it was thought this caused his death; and so this wonderful man was lost to the world in his forty-third year. He thoroughly understood all the languages usually taught in the colleges of that day—spoke and read fluently more than twenty different languages—Greek, Latin, Spanish, French, Italian, and in addition, Sanscrit, Arabic, German, Danish, Swedish, etc. He wrote on many subjects, and among his papers were found letters from the leading medical publications begging him to write for them. Dr. Galt was a gentleman of the highest scholarly attainments. He was inflexibly true to his convictions of duty. The follow-

ing words of his own composition form a fitting memorial of his character:

“God has given us the desire of fame for the good of our species. True fame, then, resulting from the desire to make our names known by doing some great good, is worthy of being; it is following out the great purpose of our Creator. It makes no difference that we shall be slumbering in the quiet grave when all that is good to which we have given rise is accomplished. We have followed out the destined end of our being; we have exercised rightly the talents which have been entrusted to us for the good of mankind.”

Searching literature on the treatment of madness he compiled a work on that subject which was at the time standard authority abroad as well as in this country, though now almost forgotten. He was one of the first to recognize the value of employment in the treatment of the insane. Such a calamity was his death that we yet feel his loss. In the record of the Galts, lasting nearly a century, we find the only parallel in America to the justly famous Tukes of England.

During Dr. Galt's incumbency three buildings were added to the institution—one for women and two large ones for men. Back of the hospital proper there was a large building connected by a covered way. In this were confined some of the worst female patients, and the lower part was devoted to colored female patients. Both classes were provided alike with all the necessities and comforts.

By the federal authorities Dr. Wager of the Fifth Pennsylvania regiment was appointed superintendent of the hospital, and held the position till the end of the war.

Dr. Leonard Henley, formerly of Blockley, had been elected by the directors to succeed Dr. Galt. He was informed by the federal authorities, however, that he would not be allowed to hold the position; but after the war his appointment was reaffirmed by the board. In a short time he was again displaced by the military and the position given to Dr. Garrett, who was succeeded by Dr. Petticolas, and at the death of Dr. Petticolas a short time after his appointment, Dr. Brower was appointed; after him came Dr. Black. Then came Dr. Wise, and about twelve years ago, Dr. Moncure, the present superintendent, was appointed.

During the time of Dr. Brower the middle and oldest part of the asylum was burned, and about eleven years ago, during Dr. Moncure's superintendency, there occurred a large fire, burning most of the buildings which were standing at the close of the civil war. Detached buildings (which Dr. John M. Galt always advocated) have been erected, giving increased capacity to the institution. On the site of the first building is now an infirmary almost finished. Across the street is a large executive building. There are now accommodations for five hundred and fifty patients.

STAUNTON, VIRGINIA.

The distance of the asylum at Williamsburg (several hundred miles) from the western parts of the original great commonwealth of Virginia called for the erection of a second institution of the same kind, and the General Assembly passed an act in 1825 providing for the establishment at Staunton of the Western Hospital for persons of unsound mind, and appropriated \$10,000 for the erection of suitable buildings. Four acres of land were purchased near Staunton, and in 1828 under Dr. Boys, the asylum was opened for the reception of patients.

Dr. Boys remained in charge of the hospital for eight years, and there were only seventy-nine patients received, of whom there were discharged thirteen. In 1836 Dr. Francis T. Stribbling, a young man only twenty-six years of age, was made visiting physician to the hospital. He found the asylum, as was that of Williamsburg, in charge of a keeper, Samuel Woodward, whose wife acted as matron. There were only forty-four patients in the hospital. The young physician was not superintendent, but only employed to visit the institution, and give such medical attention as the patients might need. He found the hospital, as most institutions of the same kind were at that time, a mere prison-house where people of unsound mind could be kept, and found no effort made to secure their recovery. He visited the best institutions in the Northern States and consulted with their superintendents, and decided on an advanced movement in the management of the asylum. He proposed startling changes, and found an intelligent Board of Directors who concurred in his views. Land was bought that the patients might find employment in farming; work was pro-

vided for the idle hands of the female patients. Amusements were introduced, and appropriations were secured for the enlargement of the buildings. A chapel was built, and the equipment of a well-furnished institution was provided. The visiting physician was made superintendent, and a full staff was appointed. The asylum which contained when he came only forty-four patients, in twenty-five years had in its care over four hundred. The war came on; provisions were scarce and hard to get, but by a wondrous Providence there was no want in the institution. At the very close of the war a cavalry raid swept upon the asylum and bore away nearly all its supplies, but the loss which would have entailed much suffering at an earlier date was repaired, and the afflicted inmates knew no real want. The good man who had given his life to care for these sufferers lived till July 23, 1874, having reached the ripe age of sixty-four, and leaving behind him as the result of intelligent devotion to his work an asylum equipped with every needful provision, and conducted upon the wisest and most humane methods. Dr. Curwen well says of him: "To talents of a very high order he united unblemished integrity." He was a man of warm and generous feelings, inflexible firmness, and had such grace and serenity as won the confidence and affection of all brought in contact with him.

Not to superintendents alone has all the credit of earnest and successful effort been due. In many instances assistant physicians have served for long periods of years, rendering meritorious services which deserve commemoration in this connection. Dr. William Hamilton served the Staunton Hospital faithfully as assistant physician for more than thirty years. On account of his extreme modesty and diffidence he was little known outside of the institution. He was a high-toned gentleman, a learned and efficient alienist, devoted to his work, loving his patients and beloved by them. He contributed not a little to the success of this institution.

Dr. Robert T. Baldwin succeeded Dr. Stribbling. He was born in Winchester, Va., elected superintendent September 24, 1874, and died in Staunton on November 14, 1879. He was a faithful and conscientious public officer, a man of decided character, charitable, with much warmth of friendship, and complete unselfishness.

Dr. A. M. Fauntleroy succeeded Dr. Baldwin. He was born in

Warrenton, Va., July 8, 1837; was a graduate of the Virginia Military Institute, an alumnus of the University of Virginia and the University of Pennsylvania; assistant surgeon in United States Army, 1860, and surgeon C. S. A., and President of the Board of Directors of the Western State Hospital. He entered upon his duties as superintendent of the Western State Hospital, January, 1880, and continued as such until 1882, when he was succeeded by Dr. R. S. Hamilton, who served two years, when Dr. Fauntleroy was re-elected, and served his second term of two years. Dr. Fauntleroy was an able and efficient superintendent, much beloved by all. He was a very capable surgeon, and before becoming superintendent was regarded as one of the ablest physicians and surgeons in Virginia. Dr. Conrad followed him. Dr. Conrad was superintendent for three years, and very attentive to his duties. Dr. Conrad was succeeded by Dr. Benjamin Blackford, of Lynchburg, Va., on the 22nd of April, 1889. The capacity of the institution has been increased to eight hundred and fifty-seven beds. The grounds have been beautified, and the needful requisites for a well-kept hospital have been provided.

CENTRAL STATE HOSPITAL, PETERSBURG.

Until December 17, 1869, the colored insane were cared for in the Eastern Lunatic Asylum at Williamsburg. The law provided that "no insane slave should be received or retained in either asylum so as to exclude any white person residing in the State." On the above named date (Dec. 17, 1869) at the suggestion of Dr. Stribbling, and by order of Major-General Canby, military commander, an asylum for the colored insane of the State was established near Richmond. Dr. J. J. DeLameter was appointed superintendent and physician. When the State was readmitted into the Union the governor reappointed Dr. DeLameter, who continued in office until July, 1870.

On the opening of this hospital there were seventy-two patients transferred from the Williamsburg Asylum. This hospital was known as the Howard's Grove Hospital. June 7, 1870, the General Assembly of Virginia passed an act authorizing the establishment of the Central Lunatic Asylum near the city of Richmond for the reception and treatment of colored persons of unsound mind, the expenses of said asylum to be provided

for and paid in the same manner as in similar institutions in the State. The Board of Directors of this new asylum held their first meeting on June 15, 1870, and elected Dr. Daniel B. Conrad, of Winchester, Va., superintendent. Dr. Conrad took charge of the institution July 1, 1870, and remained in charge until September 3, 1873. Dr. Conrad in 1886 was appointed superintendent of the Western Lunatic Asylum at Staunton, and remained in charge of that institution for three years.

Superintendent Conrad in his first annual report urgently recommended the appointment of a committee of the legislature to examine into and report regarding a site and the erection of an asylum for the colored insane of the State. At that time the asylum was located temporarily at Howard's Grove, near Richmond, and the buildings were all of wood, with only fifteen acres of land attached. This property was leased for a term of years by the State. By several enactments of the legislature, a permanent institution for the colored insane of Virginia was finally located at Petersburg, and opened for the reception of patients in April, 1885. At that time there were four hundred insane negroes in the State, all of whom were provided for in this institution.

Dr. Randolph Barksdale, upon the resignation of Dr. Conrad, September 3, 1873, was elected superintendent, which position he held until March 9, 1882. At that time the Readjuster and Republican parties got charge of the State government, and forthwith proceeded to turn out all asylum officers who were not of their political faith.

Dr. David F. May, a prominent Republican politician, was appointed superintendent in Dr. Barksdale's stead, and held the position until April 15, 1884, when Dr. Barksdale was recalled. In the meantime Dr. Barksdale was assistant physician under Dr. Gundry at the asylum for the insane, Catonsville, Md. After twenty-one years of faithful and efficient service as superintendent, Dr. Barksdale's health failing, he resigned in October, 1896, but was persuaded to remain as consulting physician. Dr. William Francis Drewry, who had served awhile as second assistant, and for nine years as first assistant physician, was unanimously promoted by the Board of Directors to the superintendency to fill the unexpired term of Dr. Barksdale.

The Central State Hospital is beautifully located on a hill three miles from Petersburg, and consists of a large center building on the Kirkbride plan, and two separate buildings, one for epileptic patients. There are now in the institution eight hundred and forty patients. The institution has an abundant supply of pure water, and is lighted with gas from its own plant. The farm attached consists of three hundred acres. All the colored insane of the State are well cared for in this hospital. The annual appropriations of the legislature amply provide for the proper maintenance of the institution.

At the centennial ceremonies of the Williamsburg Asylum in 1873 Governor Walker called attention to the fact that Virginia in her deep poverty had established the first asylum for the poor colored man ever organized.

SOUTHWESTERN STATE HOSPITAL, MARION, VA.

The large section of Southwestern Virginia was remote from the asylum at Williamsburg, and from the one at Staunton, and a hospital to be located in this section was first incorporated November 29, 1884, under the name of Southwestern Lunatic Asylum. Several counties in Southwest Virginia offered sites, and competed for the location, but the present site in Smith county was selected on account of its commanding and elevated position, and on account of the abundant supply of almost pure free-stone water which would flow by force of gravity all through the buildings from a spring two and a half miles up in the mountains—with an estimated capacity of three million gallons of water daily. The liberal people of Smith county also offered to furnish two hundred and eight acres of excellent land to the State free of cost should the asylum be located there. In 1887 a hospital with capacity for two hundred and seventy-five patients was completed at a cost of \$160,000 for buildings and furnishing. It is beautifully located two thousand two hundred and fifty feet above the level of the sea. The outside limit of accommodation was soon reached, and additional room was provided from time to time until at the close of the fiscal year 1896 the number of patients was three hundred and twenty-six. Dr. Harvey Black was elected superintendent in March, 1887. The first patients were admitted May 17, 1887. Dr. Black died October 19, 1888, and was succeeded by Dr. R. J. Preston, who

is still in charge, The institution is well equipped for its work, and all the modern methods for the care of the insane are used. There are regular religious services, amusements, and employment provided for the patients.

DR. RICHARD S. STEUART, AND THE MARYLAND HOSPITAL FOR
THE INSANE.

During the session of the legislature of 1827-28, Dr. Richard S. Steuart (then in the active practice of his profession in Baltimore, and deeply interested in the cause of the insane) obtained, with the aid of his friends, the passage of the law which established the "Maryland Hospital *for the Insane*." Prior to this period, the Maryland Hospital, established in 1797, had been a general hospital, including the sick as well as the insane, and had been leased by the State to Dr. John McKenzie and others who carried it on as a private enterprise, and under contract with the United States government received sailors of the navy and general marine. At the first meeting in April, 1828, of the Board of Visitors consisting of members from Baltimore and the various counties of the State named in the act dedicating the hospital entirely to the treatment of the insane, Dr. Richard S. Steuart was elected President of the board and medical superintendent of the hospital. His early experiences in this capacity were most interesting, and if they had been written up would be equal to the famous stories in Warren's "Diary of a late Physician." He found insane men and women chained to the floor and resting only upon filthy straw, who had not been out of their cells for years. This condition he immediately undertook to reform, and striking off the chains from the limbs of these wretched creatures, he inaugurated a more humane treatment, which was the beginning of a new era in the care of the insane in Maryland. He obtained the services of the Sisters of Charity, and appointed as his assistant and resident physician the late Dr. William Fisher. Dr. Fisher was succeeded in 1838 by Dr. William H. Stokes, afterwards and for so many years the medical superintendent of the Mount Hope Retreat for the Insane. During the first ten years of his service, finding the buildings too small, and illy adapted for the treatment of the insane, Dr. Steuart again applied to the legislature for the means to enlarge and improve the hospital and,

after a severe and exhausting struggle, obtained from the State a small appropriation with which the west wing was erected, thereby doubling the capacity of the house and relieving the over-crowded condition of the old east wing and centre building. During several years of this early period, Dr. Steuart carried the expenses of the institution upon his own shoulders, becoming personally responsible for the debts of the hospital, trusting to the legislature for reimbursement, a large part of which he never received.

About the year 1850, Dr. Steuart, with the consent and co-operation of the Board of Visitors, commenced his plans for the building of a new insane asylum, and went before the legislature with his petition for the means to purchase a suitable site for the erection of an institution adequate to the increasing demands of the period. He spent one year in examining every possible available locality, and finally decided upon the beautiful and most appropriate spot where now stands the Maryland Hospital for the Insane at "Spring Grove," in Baltimore county, the original name of the place. But here arose a difficulty. The State had appropriated the sum of only \$5,000 for the purchase of a site, and this chosen site (a farm of one hundred and twenty-three acres, overlooking the city and harbor of Baltimore and the surrounding country) could not be obtained for less than \$25,000. Nothing daunted, Dr. Steuart closed the bargain, paid the \$5,000 on account of the purchase money, and undertook to raise the balance by private subscription. He headed the paper with his own name and \$1,000, and from personal friends during the ensuing six months he obtained the balance in sums ranging from \$1,000 down to \$25. This \$20,000 was presented to the State as an offering to the cause of the insane. During the following winter Dr. Steuart again undertook to obtain from the legislature the means to erect the new asylum for the insane at Spring Grove. This proved more difficult of accomplishment than any of his previous undertakings. Between the circumscribed views of the average legislator and the obstructive tactics of a corrupt political lobby, he had well-nigh despaired of success when he called to his aid that distinguished philanthropist, Miss Dix, of Massachusetts. Most cordially did she respond to his call, for the cause of the insane had been her life work, as it had been Dr. Steuart's, also. She established

herself in Annapolis, and worked night and day until the object was accomplished and the appropriation obtained. The act included the appointment of a commission of five to build the new hospital, and included Dr. Richard S. Steuart of Baltimore, Gen. Benjamin Howard of Baltimore, Dr. Washington Duvall of Montgomery county, Col. Hanson of Frederick, and Dr. Humphries of the Eastern shore of Maryland.

The actual work was begun during the year 1853, and had progressed nearly to completion when, in 1861, upon the breaking out of the war, all work was suspended and so remained until 1866, when building operations were resumed and carried on to completion in 1872. As originally designed, as soon as the new hospital was finished and ready for occupancy, the patients were all transferred thereto, and Dr. Steuart took charge as President of the board and medical superintendent, with his cousin, Dr. William F. Steuart, as resident physician. It should be mentioned that the original "Board of Visitors" was made by the act creating them, perpetual, that is, having the right to fill vacancies in their board whenever such occurred, and Dr. Steuart continued uninterruptedly to act as President of the board and medical superintendent from the time of the creation of the board up to 1862, when owing to the political feeling created by the war then going on, a number of the members of the board, including Dr. Steuart, were suspended because they declined to take the oath presented to them by the federal authorities then in power in Maryland. Such members as could and did take the oath were at that period continued in charge of the old hospital on Broadway, with Dr. John Fonerden as medical superintendent and Mr. Enoch Pratt as President of the board. Dr. Fonerden had been the assistant and resident physician from the time of the resignation of Dr. William H. Stokes to take charge of the then new Mt. Hope Retreat, established by the Sisters of Charity when they left the Maryland Hospital. Dr. Fonerden's incumbency covered a period of some twenty years.

As soon as the war was over and the Democratic party returned to power in the State, the old board were all reinstated, and Dr. Steuart resumed his office as President and medical superintendent. He occupied this position, therefore, at the time of the removal to the new hospital and until within a few

weeks of his death which occurred July 13, 1876. He, therefore, served the State—deducting the five years of the war—continuously for forty-three years. The first years of his service were without compensation of any kind. Later, he accepted a small salary, and only from the time of his taking charge of the new hospital did he receive a salary which compensated him for his time and services. Dr. Steuart was an enthusiast in his work, and gave the best efforts of his life to the cause of the insane. The reforms in the management and treatment of the insane which he instituted and carried out were far ahead of their day, and have continued to bear fruit to the present time. The humane and scientific treatment inaugurated under his management fifty years ago, will compare favorably with that of the present day in any hospital or in any country. Dr. Steuart was a native of Maryland, and both his father and his grandfather were physicians. He was born in 1797, educated at St. Mary's College, graduated as a physician from the University of Maryland in 1822, and died in 1876, at the age of seventy-nine years. Before closing this brief sketch, it should be again mentioned that it was through Dr. Steuart's influence with Mr. Johns Hopkins—for many years a member of the Board of Visitors as well as a personal friend of Dr. Steuart—that the present site of the Johns Hopkins Hospital was chosen for the location of that magnificent gift to the State of Maryland. Dr. Steuart was succeeded by Dr. J. L. Conrad, who had held the position of resident physician for some time. He remained in charge until March, 1878, and was succeeded by Dr. Richard Gundry in June of that year.

Dr. Richard Gundry was an Englishman by birth, and was educated in Canada and at Harvard. He was a superintendent of asylums in Ohio for twenty-three years, where he did most admirable work. He was elected to the superintendency of the Maryland Hospital in 1878, and held that position until he died in 1891. He was a man of remarkable ability, a great reader, a fine writer, and a deep thinker. Dr. Rohé succeeded Dr. Gundry, and on his being put in charge of the newly-projected Second Hospital for the Insane, he resigned and was succeeded by Dr. J. Percy Wade, who is now superintendent. The hospital has now four hundred and ninety-five patients, of whom forty-seven are colored. The water supply is abundant, and

the hospital is heated by steam and lighted by electricity. There are one hundred and thirty-six acres of land, fifty of which are in cultivation and twenty-eight in grass. The buildings are handsome and commodious, and the equipment required for a first-class hospital is provided. The Second Hospital for the Insane was decided upon in 1894, and an estate near Sykesville, Md., consisting of seven hundred and fifty acres was selected, and arrangements were made for the erection of buildings consisting of a group of detached cottages or pavilions with a service building. In July, 1896, the first patients were received, and at the close of the fiscal year there were twenty-three patients. The hospital is in its infancy, but every provision has been made for its future efficiency. Dr. George H. Rohé is the superintendent.

While I have not attempted in this paper to give an account of the private asylums for the insane in the South, and have confined myself to the State institutions, I feel that an exception ought to be made in the case of two institutions, the Mount Hope Retreat, near Baltimore, and the Sheppard Asylum for the Insane. The Mount Hope Retreat is an institution for the insane conducted by the Sisters of Charity. Up to 1840 these good women had charge of the insane in the Maryland Hospital, but they then established an independent institution. Dr. Stokes, so well known for his many excellencies, was the attending physician for nearly fifty years. Dr. Stokes was born at Havre de Grace and educated in Baltimore. He spent a few years in Mobile where he passed through two yellow fever epidemics, then traveled in Europe and studied in Dublin. Returning to Baltimore in 1842 he was chosen as attending physician to St. Vincent's Asylum, which was subsequently called Mt. Hope Retreat, and remained in charge until shortly before his death, which took place in 1893. He was a man of fine attainments, and had conferred upon him many of the honors of his profession. He was an old school Maryland gentleman of courtly dignified bearing, somewhat reserved and quiet, but always warm-hearted. He was succeeded by Dr. Charles G. Hill, who is now superintendent of the Retreat. This is a private institution, but it is most elegantly equipped. It has handsome well-finished buildings, large grounds, and is admirably conducted. It has at the present time nearly six hundred patients. The grounds are ample and beautifully laid out.

KENTUCKY.

Among the early physicians to asylums, Dr. Samuel Theobald, for several years attending physician to the Eastern Kentucky Lunatic Asylum at Lexington, was notable. About 1830 he published an account not only of his institution, but also of the care of the insane in Kentucky prior to the establishment of the asylum for the insane.* Dr. Theobald says that in the early days Kentucky, like most of her sister States, provided for her insane paupers by the appointment of one or more individuals to take care of them upon terms fixed at the discretion of the judge before whom the case was presented. For this purpose the State paid \$15,500 in 1822 and \$18,000 the following year.

The disadvantages of the existing system were so apparent, and the needs of better provision so great, that in 1821 Governor Adair said in his message to the legislature that the old system of supporting the insane had proved to be wholly inadequate to the purpose of restoration to mental soundness. He therefore proposed that the State establish an asylum for the insane, giving as an additional reason that, "if only one out of twenty of those unfortunate beings, laboring under the most dreadful of all maladies, should be restored, will it not be a cause of great gratulation to a humane and generous public." Governor Adair also urged as one reason for establishing a State insane asylum that "it would prove highly beneficial to the medical school of Transylvania University, which would in time repay the obligation by useful discoveries in the treatment of mental maladies." In 1822, in consequence of this appeal, the legislature of Kentucky, for humane and politic motives, decided upon the establishment of an asylum for the insane. The sum of \$10,000 was appropriated for the purpose of carrying the act into effect. The commissioners appointed in accordance with the act proceeded promptly to the selection of an advantageous site containing about seventeen acres, and having thereon a spring of never-failing water. The tract selected had also a large and handsome brick edifice which had been constructed about the year 1817 by an association of individuals as a private hospital, called the Fayette Hospital, for the diseased of every character; but the company had failed in this humane intention and the building remained unfinished and unoccupied.

* *Transylvania Journal of Medicine*, 1830-1830.

Having purchased this property the commission proceeded immediately to have the building finished, and such additional improvements made as were then deemed adequate to the object in view. On May 1, 1824, the house was opened for the reception of patients. The commission of ten deputed to carry into operation the act relating to the asylum "were required scrupulously and carefully to examine the case of every subject brought to the asylum, distinguishing by all means in their power between such persons as might be sick or imbecile only, and such as were actually insane or of unsound mind—admitting only the latter. Also carefully to distinguish maniacs, or persons who are dangerous, from such as are quiet and peaceable, making orders for their confinement or otherwise. The first day of May ensuing the passage of the act was fixed as the period at which all laws committing persons of unsound mind to the care of committees, and charging the treasury of the State therewith, should cease; and that thereafter the care and safe keeping of all such persons should be confided to the lunatic asylum." The commission was further invested with full power to discharge restored patients. It was further enacted that no person should be supported at the asylum at the public charge who had an estate for his support. Andrew Stainton was made superintendent and Dr. James C. Cross was appointed resident or house physician. The medical faculty of Transylvania University, then a famous medical school, in a spirit of humanity and liberality which reflects much honor on them, tendered their services gratuitously as consulting physicians. In a short time Dr. Cross resigned. He was succeeded by Dr. William L. Thompson, who also had a short service. Dr. Theobald became attending physician in January, 1826, and served several years.

The laws of Kentucky in 1842 still allowed the quiet and peaceable to be maintained at their own homes out of the public treasury. There was also considerable prejudice against hospital establishments so that few but the worst cases either of paupers or the wealthier class were sent to the asylum. The asylum was primarily intended for the insane poor alone, but for some years before 1842 had received other patients from Kentucky and other States at the cost of two dollars and fifty cents per week. Dr. Bush was physician to Lexington Asylum

in 1841 and his report, according to Dr. Jarvis, showed great improvement in the care of the insane, and the legislature was inclined to grant desired appropriations. It is interesting to note that tickets of admission to the asylum were issued to the members of the medical class of Transylvania University. The faculty of the medical school had the hospital in charge until 1844. It was a mad-house for the safe-keeping of lunatics rather than an asylum for their care.

With the coming of Dr. J. R. Allen in 1844 there was a decided change for the better. He remained in charge until 1855, when he was succeeded by Dr. W. S. Chipley who held the place for fifteen years. Dr. George Bryant, Dr. Chenault, Dr. W. D. Bullard and Dr. F. H. Clark all had short terms, and January, 1896, Dr. W. E. Scott, the present superintendent, was appointed. We learn from a report of Dr. Scott, that the farm consists of two hundred and fifty acres of land; that there were in the asylum in September, 1896, seven hundred and ninety-one persons, of whom one hundred and twenty-eight were colored. The buildings, Dr. Scott reports, have some of them stood for eighty years, and should be removed and better buildings erected.

WESTERN KENTUCKY LUNATIC ASYLUM

The foundation of the institution was laid in 1849. The building was opened for patients in September, 1854. It was burned in 1860, rebuilt in 1861 and 1862, and re-opened in 1863. The first superintendent was Dr. Samuel Annan, who was in charge from 1855 to 1857. He was succeeded by Dr. Francis G. Montgomery who remained in office until 1863, when he was in turn succeeded by Dr. James Rodman, who was superintendent of the institution continuously to April 20, 1889. Then Dr. Barton W. Stone was appointed superintendent. He continued in office until January 30, 1896, when he was succeeded by Dr. Ben Letcher, who is still in charge. The cost of the buildings as they now stand is about \$310,000. They have a capacity of five hundred and fifty patients. The asylum has been overcrowded with patients for the past ten years and now has an insane population of six hundred and twenty-five. The first provision for admission of colored patients was in February, 1879. The colored population is now about one hundred and twenty-

five. The Eastern Kentucky Asylum admitted all the colored insane of the State up to February, 1879. At the present time all asylums admit the colored insane of their respective districts.

CENTRAL KENTUCKY ASYLUM.

The asylum now known as the Central Kentucky Asylum was opened in August, 1873, under the care of Dr. C. C. Forbes. The buildings, which had been designed as an Industrial School for Juvenile Delinquents, were adapted to the uses of the hospital, and when the institution began its work, had a capacity for one hundred and seventy patients. Dr. Forbes remained in charge for nearly five years. Dr. Gale succeeded him and remained in charge for nearly five years more. Dr. Henry K. Pusey, who followed him, was in charge of the institution for two terms, from 1884 to 1886, and from 1891 to 1896, Dr. Burns succeeding his first term. Dr. H. F. McNary is now in charge.* The institution, as will be seen, has had a number of superintendents, but perhaps to none of them was it as much indebted as to Dr. Pusey, who was in charge of it for two terms and who died while he was superintendent, on December 2, 1896. Dr. Pusey was a recognized authority upon hospital architecture and sanitation, and he was one of the first to favor the building of houses for the insane no more than two stories in height. The Board of Directors of the Lakeland Asylum for the Insane testified their appreciation of him by passing suitable resolutions, and by naming the latest addition to the asylum buildings "Pusey Hall." The sentiment of the legislature, largely influenced by him, became more and more liberal, and appropriations of a more generous kind were made, until at the present time the institution has one thousand two hundred patients under its care, white and colored. It is well equipped in every respect, has electric lights and a full water supply, commodious and attractive buildings, and large grounds of five hundred and fifty acres, of which seventy acres are in garden. There is a building for colored patients, of whom there are now two hundred in the asylum.

* Dr. McNary died May 12, 1897.

WEST VIRGINIA.

When Western Virginia was a part of the present State of Virginia it was decided by the general assembly to establish an asylum for the insane in the far west of the State, and Weston was selected as the point. The first report of the directors was made in 1859. The asylum, however, though completed, was not opened for some years. The war came on, and the State of West Virginia was separated from the old State. It was not until 1864 that the institution began its work. During the war the State of Ohio had received in its asylum at Columbus the insane from Western Virginia. Before the war they had been sent to Staunton and Williamsburg. As soon as the West Virginia Hospital was able to receive them, the patients came from each of these institutions. Dr. Hilis, of Columbus, Ohio, was the first superintendent, and retained his place until 1871, when he was superseded by Dr. Camden. Dr. Hilis had been superintendent of the Asylum for the Insane at Columbus, and after leaving the asylum he traveled extensively in Europe, and then returning to Ohio became superintendent of a Reform School for Girls. He died about 1890. Dr. Camden was in charge of the institution until 1881, about ten years, when he resigned, and was superseded by Dr. Bland, who remained in charge for two years only. Dr. Lewis, who succeeded him, was in charge for five years, and was followed by Dr. W. P. Crumbacker, the present superintendent. The institution is well equipped. The buildings are commodious and attractive. The section in which they are located is picturesque and healthful, and the provisions for the insane ample to meet all demands, since the establishment of a second hospital at Spencer. There are now in the asylum at Weston nine hundred and thirty-eight patients.

The asylum at Spencer was completed in 1893. The buildings are of brick and stone, with slate roofs and iron stairways, and the asylum is equipped with everything necessary and convenient. The buildings are heated and ventilated with the fan system, and with a capacity for a temperature of seventy-two degrees. The asylum is capable of providing for four hundred and fifty patients. It has one hundred and fifty acres of land connected with it, and the buildings have cost up to this time over \$200,000. The institution has in it now two hundred and

thirty-five patients and is under the superintendency of Dr. W. D. Row. It is located in a healthful mountain town, and, with everything favoring health of body and mind, it is admirably adapted to do the work for which it was designed.

NORTH CAROLINA.

That public benefactress of the insane, Miss Dix, visited North Carolina to interest the people in making some provisions for the proper care of the insane. There were at that time but few railroads in the State, and she was compelled to undergo the great inconvenience and even hardship of the primitive means of travel to visit the remote mountain counties, but no hardship or privation for a moment deterred her. While a favorable public sentiment to some extent throughout North Carolina had been awakened by her efforts, when the legislature assembled she met with great opposition from the small politicians of that body. Hon. J. C. Dobbin, afterwards Secretary of the Navy, was Speaker of the house. She attempted to secure Mr. Dobbin's co-operation and valuable aid by interesting his wife in the cause. Mrs. Dobbin became deeply interested in the enterprise, but unfortunately died during the session of the legislature, and before she had succeeded in greatly interesting her distinguished husband in the good work. Failure now appeared to be inevitable. Miss Dix, not discouraged, and with the ready tact of her sex, appealed pathetically to him in the name of his wife, and as a memorial to her to arouse himself and give his great influence in behalf of his afflicted fellow citizens. He went to the hall of the house, descended from the chair to the floor, and it is said made the most eloquent and effective speech ever delivered before a North Carolina legislature. It took the body by storm, and from that moment the establishment of the hospital was an assured fact. A bill was passed in 1849 establishing a State hospital for the insane to be located on a beautiful hill near Raleigh, and named in honor of the distinguished lady, Dix Hill.

Dr. Strudwick, of Hillsboro, was elected first superintendent, but declined, feeling himself incompetent by reason of the fact that he had no experience in the care and treatment of the insane. Dr. Edward C. Fisher, an assistant physician at the asylum in Staunton, Virginia, was then elected superintendent

of construction. When he assumed supervision of construction the massive stone foundation of the main building had been laid and the walls of the central portion and north wing had been completed and covered. The original plan did not permit all that might have been desired; it, however, embodied the main features most to be desired in a hospital building for the insane. Throughout the process of construction the work of Dr. Fisher was characterized by careful economy and conscientious and untiring faithfulness to the duties incumbent upon him. On October 1, 1855, he was elected superintendent and physician of the North Carolina Insane Asylum. The first patient was admitted by him to the asylum on February 22, 1856.

Dr. Edward Fisher was superintendent and resident physician until July 7, 1868. During the period of reconstruction he was removed for political motives by the Republican party, but about 1871 he again became connected with the asylum for the insane at Staunton, Virginia. In 1881 during the readjustment turmoil in that State he was again removed from his active life work, but was restored to his place in 1884 and remained until his death. He was the pioneer of the work for the insane in North Carolina, and there is no sadder chapter in the history of the institution at Raleigh than his displacement. He was a competent alienist, a gentleman, modest, bright, noble and blameless, and his life was one of long usefulness. He was born in Richmond, Va., in 1809, and died at Staunton, in 1890. Dr. Fisher was succeeded at Raleigh by Dr. Eugene Grissom, and he by Dr. W. R. Wood, who served one term and resigned, and he by Dr. George L. Kirby, who is still in charge. The present capacity of the institution is four hundred and twenty patients. Much of the credit of this institution is due to Dr. Francis Taylor Fuller. He was the first assistant physician for nearly forty years. The following extract is taken from the North Carolina *Medical Journal*, October, 1894:

"Dr. Fuller was born in Granville county, North Carolina, June 14, 1835, and died September 14, 1894. He was educated at South Lowell Academy, in Orange county, afterwards teaching school for a time before commencing the study of medicine. He graduated in the Medical Department of the University of Pennsylvania in the spring of 1856, and in a short time thereafter he was elected assistant physician in the North Caro-

lina Insane Asylum at Raleigh, and entered upon his life-long work. For twelve years he served as assistant physician to that excellent, intelligent, Christian gentleman, Dr. Edward C. Fisher, superintendent, who was a model of all that was required in a man to administer to the mental, moral and physical diseases of those under his care. For twenty-one years he was the assistant physician under Dr. Eugene Grissom, of Granville county, who succeeded Dr. Fisher in 1868. During all these years his intelligent, faithful service was justly appreciated by these gentlemen. No man was ever more faithful and devoted to his work than he. He loved the institution and its inmates, and devoted his life to their welfare. He was an intelligent, high toned, Christian gentleman, honorable and upright in everything."

MORGANTON, NORTH CAROLINA.

In 1875 a new asylum was erected at Morganton in the western part of the State. The State Hospital at Morganton in the mountain region, commands one of the finest landscapes to be found in the South, and shows a death rate so low as to be of general remark in the reports. It is built of brick on the Kirkbride plan, having a frontage of nine hundred and eighteen feet and a depth of forty feet. Dr. P. L. Murphy, having been elected superintendent in December, 1882, has been in continuous charge since its opening in April, 1883. Attached to the institution is a large and finely conducted farm, which has been a source of profit to the State and of incalculable usefulness to the patients in supplying them with an elective employment suited to the former life of the greater number and recreative to all. All modern appliances in construction and design are found here. The present capacity of the institution is seven hundred and eighty-five. The number of patients is, male, three hundred and forty; female, four hundred and twenty-five. The cottage plan, as advocated by Dr. Murphy, has been endorsed by the present legislature, though no appropriation will be made until 1898 to provide for the large number of insane in the Morganton district now in the jails and poor-houses, or confined at home.

Congregate dining-rooms have been erected in the rear of each wing of the main building. The non-restraint system pre-

vails. The record of cures for the past year is over fifty per cent.; the average for the entire period is about forty-two per cent., and this despite the fact that upon the opening of the hospital it received by transfer from the parent institution at Raleigh all the chronic insane resident in the Western district. The water supply of the hospital is abundant, and great care is taken to preserve its purity, the whole water-shed being the property of the State, much of it being in original growth timber. A hook and ladder company has been organized from the employees of the institution, and a large reservoir affords quick command of water in case of fire. Besides this, fire-proof sections are built between the wings and the administration building so as to isolate and confine to one section any flame that may break out. The complete ventilation of the entire building is effected by rotary fans in the engine room. This institution has the reputation of being the model institution in the South, both in construction and administration.

EASTERN ASYLUM FOR THE COLORED INSANE, GOLDSBORO.

The large number of negroes in the eastern portion of the State, and the great increase of insanity among them, made larger accommodations necessary, and an asylum exclusively for the colored insane was decided upon. In March, 1875, the general assembly of North Carolina appropriated \$10,000 to provide a branch asylum for the colored insane at Wilmington, to be subject to the same superintendence, rules and regulations as the institutions for the whites at Raleigh, where some negroes had been under care since emancipation. The act also provided that the expenditure for each patient should not exceed two hundred dollars per annum. As the directors empowered to carry out the purpose of this act were unable to effect a lease of the Marine Hospital building at Wilmington, the first steps toward establishing a separate hospital for the colored insane of North Carolina were temporarily obstructed. They finally located the Eastern Hospital, as it is called, two miles west of the city of Goldsboro, on an eminence near Little River. The building was completed and ready for the admission of patients August 1, 1880. The buildings are commodious and handsome and have a capacity of four hundred and twenty-five patients. The present number is three hundred and eight. There are at-

tached to this institution three hundred and twenty acres of land, but much of it skirts the river, and being subject to overflow, is not cultivated. The amount farmed is one hundred and seventy-five acres, and the products are such as are consumed by the population of the asylum. The institution is in successful operation and doing a good work. Dr. W. H. Moore was the first superintendent, but served only a few months, when he died. Dr. J. B. Roberts was elected his successor, and served for six years. He was then succeeded by Dr. J. F. Miller, who is still in charge.

SOUTH CAROLINA.

In the early days of the South Carolina colony, as was probably the case in all the colonies, the insane, whether free or slave, were cared for in almshouses where such existed, but the pauper insane, white and black, were provided for and supported at the expense of the parish. During the excitement before the revolutionary war concerning the stamp act, it appears from incidental allusion that a mad-house, as it was called, existed in Charleston, but we have no definite information about it. In 1821, through the combined efforts of Mr. Farrow of Spartanburg, and Mr. Crafts of Charleston, the legislature passed an act appropriating \$30,000 for the erection of an asylum for the insane, and a school for the deaf and dumb, in Columbia, the State capital. The commission appointed to investigate the subject reported that the association of the two classes in one institution was impracticable. The whole amount was expended in the erection of an asylum for idiots, the insane and epileptics. Not until 1828 was the institution ready for the reception of patients, when its doors were opened alike to pauper and pay patients, the paupers being supported by the counties. The institution was managed by nine trustees, or regents, who were residents of Columbia. Dr. James Davis, for many years an eminent practitioner of the city, was made visiting physician, and a layman was made superintendent. Of Dr. Davis (born in December, 1775; died August 4, 1838) it was written: "He was a man of genius and learning, and would have been distinguished in any intellectual pursuit to which he had directed his attention. Devoted to his profession, he brought to his practice a rare combination of all the quali-

ties requisite to success—knowledge, sagacity, energy and enthusiasm. He was the earliest and most zealous and most efficient contributor to the foundation and success of the Lunatic Asylum.”

In 1835 Dr. D. H. Trezevant succeeded Dr. Davis as visiting physician, but like his predecessor, he was able to give the institution only a small part of his time. The undertaking was largely an experiment, and although receiving pay patients from adjoining States, its means of support were very limited. The people had not learned to appreciate an institution of this kind, and for eight years the asylum had a feeble life. In that time it had three non-medical superintendents. In 1836 a change was made by the election of Dr. J. W. Parker as superintendent and resident physician, but Dr. Trezevant continued his services as visiting physician. These two gentlemen continued to serve the institution in their respective capacities until 1858, when Dr. Trezevant resigned. Dr. Parker continued his connection with the institution for forty-two years. Upon the board of regents had been many of the most broad-minded and public-spirited citizens of the State. In establishing an asylum with the experience of only one State as a guide, it was natural that errors were made by South Carolina. The chief mistake was in locating the institution within a city upon a square of four acres. Its location has always been an obstacle in many ways to its success, and although from time to time great efforts have been made to remove the asylum to the country, it has never been possible to obtain legislative sanction to the step. Errors of construction were also made, which to this day menace the health of the patients who occupy the old building. This was erected according to the ideas of inexperienced men in the first quarter of the century, and still remains in many ways unchanged. While the institution served for years as a home for many insane not only of South Carolina, but also of North Carolina, Georgia, Florida, Alabama and Mississippi, it also performed the important service of warning the other Southern States to establish their asylums in the country. In the fifties, increase in the number of insane demanded the erection of new buildings in Columbia or elsewhere. After long and bitter controversies between the regents, the asylum officers themselves, and the members of the legislature, it was most unfortunately

decided in 1856 to continue the urban policy by building on land separated from the old building by a city street. This step practically committed the State to the policy of maintaining her insane within a city. The appropriations permitted the erection of only the first section of the south wing before the war, and by slow additions a building on the linear plan, accommodating four hundred and fifty patients, was completed in 1885. The institution was most creditably maintained during the civil war mainly through the energy and foresight of Dr. Parker, the superintendent.

In passing, it may be remarked that the maintenance of our insane hospitals during the four years' struggle is an important chapter in the history of these institutions, and is most worthy of separate mention in our chronicles. During the period of reconstruction Dr. J. F. Ensor succeeded Dr. Parker as superintendent. Dr. Ensor discharged his difficult duties with fidelity, even to the point of getting supplies on his personal credit when the Governor of the State refused his endorsement. Under his advice South Carolina adopted the principle of State care for all pauper insane as early as 1870. In 1876 Dr. P. E. Griffin succeeded Dr. Ensor. Under his administration the institution purchased more land, bringing the total acreage up to three hundred and fifty. Additional wards of brick were added to the new building, until it was finally completed. Dr. J. W. Babcock succeeded Dr. Griffin in 1891. As the last three gentlemen are still living, further comment upon their work is omitted. To-day the institution consists of the old building, accommodating two hundred patients, the new building with four hundred and fifty beds, nine wooden pavilions for colored patients, a cottage named for Miss Dix, accommodating thirty white women of the quiet class, three buildings for officers and families. Within two years the old style name of asylum has been changed to State Hospital. There are four infirmary wards, and a training school has been in operation since 1892. By the purchase of adjoining property and the closing of streets the whole hospital has been brought into one enclosure, and the grounds afford ample room for exercise and recreation. The institution is lighted by electricity, and gets its water supply from the city. The property consists of three hundred and fifty acres, of which two hundred and thirty acres are fertile

farming lands. The crops produced aid materially in the support of the institution. A brick structure now being built for colored men bears the honored name of Parker. The hospital is discharging a useful function in the State, and is meeting with what legislative aid it asks for and deserves. The last report shows a daily average of eight hundred and fifty-four.

GEORGIA.

Up to 1837 Georgia had made no provision for the care of her insane. They were not many, but they were fearfully neglected. That year there came to Milledgeville a Northern philanthropist, whose object was to petition the legislature to do something for them.

“No blaring trumpet sounded out his fame;
He lived, he died—I do not know his name.”

Milledgeville, the town in which the legislature met, had a small faculty of distinguished physicians, Drs. White, Fort, Case and Green, and he solicited and received their hearty co-operation in his worthy effort. These physicians, aided by Drs. Phillips and Arnold and Judge Harris, who were members of the legislature, appealed to that body for assistance. The legislature yielded somewhat reluctantly to their entreaty, made an appropriation, and appointed a commission. The commission bought for a small price forty acres of sterile pine land located on a high hill overlooking the town, and situated about two miles from it. Plans for buildings were secured and work was begun, but in the early part of 1842 none of the buildings were finished. It was a time of great financial depression, and the State was burdened with debt so that the legislature ordered all work to be confined to one building. This was made ready to receive patients, and in December, 1842, the first patient was admitted. The plan of self-support was adopted. The counties were to pay the expenses of their pauper patients, and the friends of patients who were able to pay were to provide for their dependents. This plan was changed to State care of the pauper insane about 1846. Up to 1877 patients were received from other States, but at that time the general assembly passed an act sending all non-resident patients to their respective States, on account of the over-crowded condition of the institution. During the same year an act was passed making the in-

stitution free to all *bona fide* citizens of the State. This act also provided that relatives of patients could deposit with the steward funds for extras to be used by the patients individually, but no part of this was to go to the support of the institution.

When the institution was first opened it was in charge of a layman, and a physician was employed only when his services were needed. These methods were gradually changed. In 1843 Dr. David Cooper was elected superintendent. He was a man of ability, but of great eccentricity, and was entirely unacquainted with the real demands of his work. Had he known these demands, he would have found it difficult in the state of things then existing to have complied with them. He retained his position three years, and during that time had but few patients. The attention of the trustees had been directed to Dr. Thomas F. Green as one who was likely to succeed with a very unpromising enterprise, and he was persuaded to accept the superintendency. Dr. Green was the son of an Irish exile who was in the rebellion of 1798. His father was a physician, a man of high culture, and was professor in the State University. Dr. Green was born in Beaufort, S. C., in 1803. He received his general education at the State University in Georgia, and medical at Charleston, S. C. He settled in Milledgeville as a physician, and was a successful and popular practitioner when he was chosen as superintendent of the asylum. The patients he found in the asylum were of the worst possible description. Only those who were a burden at home, and for whose recovery there was no hope, were sent to the asylum, which being regarded as a mad-house, inspired the people with terror.

While Dr. Green had a difficult task before him he was admirably adapted to perform it. He was a man of kindest heart, most genial manner, and of great enterprise and energy. He soon secured the confidence not only of the patients, but of the people of the whole State as well. He succeeded in obtaining appropriations year after year, in making improvements, in securing a suitable corps of attendants, and in every way providing for the treatment of the insane. He had helpful assistance in the visit of Miss Dix in 1852, and, being himself a man of great intelligence, his own measures were eminently wise. He remained in charge of the asylum from 1847 to 1879, when in the beauty of a happy and serene old age, with eye un-

dimmed and undiminished mental vigor, he suddenly passed away. His monument was the magnificent institution which he had watched over almost from its foundation. For twenty years Dr. Green and myself had been associated as colleagues in the management of the asylum, and when he died I was selected to take charge of it. I have been in charge for nearly twenty years, and in connection with the institution for thirty-five years. In none of the exciting political campaigns of the State has there been at any time any decided interference with this benevolence, and the legislatures have generously and generally granted all the requests made by those in charge.

The asylum is charmingly located. A magnificent view is had from every direction, and perhaps in no part of the land is there a better health record. The completion of the second building in 1847 enabled the trustees to make markedly beneficial changes in the asylum. The female patients were placed in the new building, thus entirely separating them from the males. This enlargement also offered greater facilities, and the increased appropriations of money for maintenance enabled the authorities to make many improvements, the substitution of white attendants for negroes, who had formerly discharged this duty, being one of them. In 1849 it was found urgently necessary to make additional provision for the insane of the State. Plans and estimates were submitted to the legislature for enlarging the asylum accommodations. The plan contemplated a large, showy building to be erected in front of the existing wings, and additions to the latter which would make the structure in the shape of the capital "E," or, as it is called, the Kirkbride plan. The legislature appropriated \$10,500, and in 1851 \$24,500 for the enlargement of the institution. Every dollar of this appropriation was expended upon the foundation of the present center building before the walls had reached the surface of the site. Supplemental appropriations were made as follows: 1853, \$56,500; 1855, \$110,000; 1857, \$63,500; 1858, \$30,000. The building was completed in 1858. In addition to furnishing quarters for asylum officials and necessary offices, it provides accommodations for a large number of patients, each patient occupying a separate room ten by twelve feet. This building, as all others attached to it, is divided into sections or wards, each provided with a dining-room, parlor, etc., and all modern

improvements. In 1870 and 1871 an appropriation amounting to \$105,855 was voted for enlargement of the asylum. This sum was expended in enlarging the main building. In 1881 at the urgent solicitation of the board of trustees the legislature decided to erect two separate buildings for white convalescents, one for males and the other for females, and appropriated \$165,000 for this purpose. In 1883 a supplemental appropriation amounting to \$92,875 was voted by the legislature. In 1893 the legislature, after an urgent appeal from the board of trustees, voted \$100,000 for the erection of additional buildings for white and colored insane. The building for whites has a capacity for six hundred patients, and the two annexes to the building for negroes will afford accommodation for about three hundred patients.

The emancipation of the negro population in 1865 necessitated asylum accommodations for the insane of this race. In 1866 the legislature appropriated \$11,000 for an insane asylum for negroes. The building was located on the grounds of the asylum for the whites. In 1870 additional accommodations for this class being deemed necessary, the legislature appropriated \$18,000 for enlargement of the building for negroes. In 1879 the legislature appropriated \$25,000 for the same purpose, and in 1881 an appropriation of \$82,166 for a new building and heating apparatus for the same was made for the colored insane. These several enlargements provided for five hundred and forty-one negroes. The overcrowded condition of the negro building, and the urgent demand for care of a number of negro insane who could not be admitted for want of room, caused the board of trustees to begin enlargement by adding two annexes one hundred and twenty-eight by thirty-one feet each, four stories high, to the existing negro asylum. These additional buildings, as above stated, provide accommodation for about three hundred patients in the negro institution. We have at the present time six hundred and twenty-five negro patients.

There have been made from time to time large purchases of land adjoining the asylum until the institution now has over three thousand acres in one body. The institution has its own water works, the water being furnished from a bold stream on its own grounds, and has, besides, a well nine hundred and

sixty feet deep, much of it through solid rock. The institution has a training school for nurses, and a well-equipped laboratory under an efficient neuro-pathologist. The non-restraint system has prevailed for many years. There are at the present time over two thousand one hundred patients in the institution. The asylum comprises a number of buildings as follows: First, the main building. The front presents a handsome, showy brick structure, three stories high, of Grecian architecture. With the exception of the capitol building in Atlanta the center asylum building is the handsomest edifice in the State of Georgia. Besides the superintendent's apartments, rooms for visitors, and offices, the building accommodates about five hundred patients, with necessary nurses, etc. Second, two brick buildings for convalescents, three stories high, accommodating one hundred and forty patients each and nurses. These are located on each side of the front of the center building, about five hundred feet from the latter, and about one thousand feet apart. Third, two brick detached buildings, three stories high, in the rear of the center edifice, accommodating about one hundred patients each. Fourth, two one-story wooden detached buildings for patients too feeble to ascend to the higher floors, accommodating forty patients each. Fifth, the building for negroes located a quarter of a mile in the rear of the building for whites. This is also of brick, three stories high, and like the building for whites, provided with all modern conveniences. It comfortably provides for six hundred and fifty insane negroes, besides the supervisor and attendants. About a mile distant from the asylum proper is located the contagious diseases hospital which, as its name indicates, is reserved for treatment of any contagious disease which may be brought into the institution. It accommodates sixty patients and attendants. In addition to the above-described buildings, the new building for whites accommodates six hundred patients. The total cost of the land and buildings is more than one million dollars.

ALABAMA.

Miss Dix began to agitate the foundation of an asylum for the insane in Alabama in the autumn and winter of 1849. The State Medical Association came to her aid in 1851 and 1852, and through their efforts a bill was introduced and passed appropriating

\$100,000 for this purpose. When this was exhausted \$150,000 more was appropriated. The foundation of the building was laid in 1852, and it was ready for occupancy in 1860. The buildings were designed on the Kirkbride plan, and were calculated for three hundred and fifty patients. When the institution was ready for opening, and a superintendent was to be chosen, the trustees selected Dr. Peter Bryce, at the instance of Miss Dix, who had met him in Columbia, S. C. He was a young man twenty-six years old when he came to take charge of the new enterprise. Dr. Bryce belonged to an excellent South Carolina family, and had been educated at the South Carolina Military Academy. He then graduated in medicine in New York, and afterwards pursued his studies in Europe, especially in Paris. As soon as he returned to America he was selected as assistant physician in the State Lunatic Asylum of South Carolina. Subsequently for a short time he occupied the same position in Trenton, N. J. Although quite a young man, he was selected as the first superintendent of the Alabama Insane Asylum. He at once evinced especial fitness for the position to which he had been chosen. He was remarkable for the skill with which he organized and managed an institution of this kind. Possessed of a mind of high order, he had had advantages of unusual value. He, however, had been in this position but a year when the war began, and the great difficulty which all the superintendents found in those trying days, he was compelled to meet. He did so successfully. During the darker days of reconstruction he held his place, and amid all its perplexities safely found his way through. He inaugurated great improvements, and during the thirty-two years of his administration he brought the asylum to the front rank among the institutions of its kind. When he died in 1892 there were eleven hundred patients in its care. The legislature of Alabama testified its high appreciation of his services by changing the name of the Alabama Insane Hospital to "Alabama Bryce Insane Hospital." His last resting place is the lawn in front of the institution to which he had devoted his life. This great and good man remarked upon his death-bed that it was "probably a good time" for him to die. He had seen the successful result of his life work, in the excellent name and good condition of the hospital, secured almost wholly through his own energy and good judgment.

After Dr. Bryce's death, Dr. J. T. Searcy, of Tuscaloosa, who had been President of the board of trustees, was elected superintendent, and is now in efficient charge of the hospital. From his last report it appears that there are about one thousand two hundred and fifty patients now in the institution. The same general industrial system, by which the patients are employed toward their own support, that has characterized this hospital for a number of years, is maintained with increased success. This hospital over fifteen years ago under Dr. Bryce adopted the non-restraint system of managing patients, which is still advocated and maintained. The institution has a training school for nurses, and a well-equipped laboratory conducted by an efficient neuro-pathologist. The sad fact hitherto noted of the great increase of insanity among negroes demanded separate buildings for them. As is usual, they are supplied with colored nurses who are under the direction of white physicians and supervisors. There are now about three hundred and fifty negroes in the asylum. About one hundred negro men are colonized about two miles from the main buildings, and have shown the experiment to be a successful one. They are contented, are the healthiest class of patients under this management, and by their farm labor contribute largely to the support of the institution.

MISSISSIPPI.

It was not until 1846 that Mississippi proposed to do anything for her insane people, and then the ideas of the legislature were exceedingly contracted. The bill for the establishment of a hospital consequently failed, but two years afterward was passed. The Governor suggested an appropriation of \$3,000, thinking that would be sufficient, and the people of Jackson offered a lot of four acres. The legislature, however, had more liberal views, and appropriated \$10,000, and as the lot of four acres was too small, another not far from the city was purchased. The \$10,000 was soon expended, and then it was discovered that the work was defective and the expenditure lost. About this time that remarkable woman, Miss Dix, visited the State of Mississippi, and appeared before the legislature and secured an appropriation of \$50,000. To this was added another \$75,000. Then \$30,000 more was found to be needed, and finally the \$10,000 intended for the running expenses of the asylum was expended

on these buildings. The buildings were at last ready, but there was no money for the maintenance of the patients. The trustees, however, came to the rescue, and giving the Governor sufficient bond to indemnify him in case the legislature refused to reimburse the treasurer, he consented to make the needful advance, and the asylum was opened for the reception of patients in 1855. From 1855 to 1878 there were six different superintendents. The first was Dr. W. S. Langley, who served for three years. He was succeeded by Dr. W. B. Williamson, who was superintendent one year only and was succeeded by Dr. Robert Kills, who remained in office about six years. Dr. A. B. Cabaniss who succeeded him was superintendent for three years, and was followed by Dr. W. B. Deason who remained in office twelve months. He was succeeded by Dr. W. B. Compton, who was superintendent for eight years. Dr. T. J. Mitchell, the present superintendent, was elected in 1878.

The buildings are commodious, and there is room for over eight hundred and thirty patients, of whom nearly four hundred are colored people. During the year 1892 the center building was consumed by fire, but has since been rebuilt. The demand for accommodation having been too great for a single institution, another was established in Meridian, known as the East Mississippi Asylum. This institution was opened for the reception of patients in 1885. Dr. C. A. Rice was superintendent, and Dr. J. M. Buchanan, assistant superintendent. Dr. Rice retained his position for five years when he was succeeded by Dr. Buchanan, who is still in charge. The asylum had a capacity for two hundred and fifty originally, but has since been enlarged, and is now capable of accommodating three hundred patients. There are now in the asylum two hundred and eighty patients. The asylum is built of brick, three stories high, on the Kirkbride plan. It is heated by steam, and water is furnished by a deep well with a capacity of one hundred thousand gallons per day. The patients of the asylum are exclusively white. These two well equipped institutions meet the present demands of the State amply.

TENNESSEE.

As early as 1830 the attention of the general assembly of Tennessee was called to the necessity of providing for the insane.

An act was passed October 19, 1832, to erect a stone structure to cost \$10,000. In 1836, \$2,500 was appropriated by the legislature for completing and furnishing the institution, and again in 1838, \$15,000 more was appropriated for its aid. The original site of this building was immediately in the vicinity of Nashville. It was of moderate capacity, and served as the State Lunatic Asylum until 1852. The first physician elected to take charge of the institution was Dr. John D. Kelly. The office of superintendent was filled by a layman, and upon this method the asylum was managed ten years. Dr. Kelly was succeeded by Dr. John S. McNairy, who remained in office many years. In the progress of time the old institution was found to be of faulty construction as regarded the health, comfort, and security of the patients. In 1845 an act was passed authorizing the sale of the old asylum and the purchase of a new one. During the legislative session of 1847-48, Miss Dix visited Nashville, and seeing the deplorable accommodations for the insane, made a strong appeal to the legislature. As a result, of her efforts, in February, 1848, an act was passed establishing a hospital for the insane. In the same year, two hundred and fifty-five acres of land were purchased in one of the healthiest localities in Tennessee about seven miles from Nashville. The site being secured, Dr. John S. Young was appointed superintendent, and Major A. Heiman, architect. The plans finally chosen were based upon those of the Butler Hospital of Providence, R. I., which in turn were copied by Dr. Luther V. Bell from the asylum at Maidstone, England. The style of architecture is the castellated. The length of the building is three hundred and twenty feet front, east and west. The greatest breadth across the center is ninety-eight feet. The center building and the extremities of the east and west wings are four stories high. In March, 1852, Dr. W. A. Cheatham was made superintendent, and in the following month patients were removed from Nashville to the new institution. In 1855, two hundred acres were added to the asylum tract by purchase. In 1866, an asylum for the colored insane, was erected several hundred yards from the main building. In March, 1891, a fire destroyed the west wing of the main building, but this has since been rebuilt. There are now four hundred and eighteen patients in the asylum, of whom eighty-nine are colored—fifty-one females and thirty-

eight males. Dr. Cheatham remained in charge until August, 1862, when he was arbitrarily removed from office by Andrew Johnson, the military governor of Tennessee, who appointed Dr. W. P. Jones superintendent. Dr. Jones remained in office until, injured by a blow on the head given by a violent patient, he resigned, and was succeeded by Dr. John H. Callender in 1869. Dr. Callender was continuously in office until 1894, when he resigned and established a private sanitarium in Nashville. Dr. John A. Beauchamp was his successor, and is still in charge of the institution.

EASTERN HOSPITAL FOR THE INSANE, KNOXVILLE.

In 1883, \$75,000 was appropriated by the legislature to erect an asylum in East Tennessee on a tract of land near Knoxville, which had previously been secured for that purpose. Dr. Michael Campbell was appointed superintendent of construction. On the completion of the building he was elected medical superintendent, and is still in charge of the institution. The buildings have a capacity of from two hundred and fifty to three hundred patients, and cost with furniture, exclusive of land, between \$200,000 and \$300,000. The grounds include three hundred and five acres. The buildings are of brick in the Norman or castellated style of architecture, lighted by electricity, and heated by steam. The present number of patients is two hundred and eighty-two.

WESTERN HOSPITAL FOR THE INSANE, BOLIVAR.

In 1886 a commission to select a site for the Western Hospital was appointed by the legislature. The commissioners, J. M. Lea, Dr. J. H. Callender and Dr. William P. Jones, selected a tract of three hundred acres, between two and three miles from Bolivar. The State paid \$5,000 and the citizens of the county donated \$3,000 to secure the tract. Dr. J. B. Jones was selected as superintendent of construction, and on its completion was elected medical superintendent. It was opened on December 24, 1889, for the reception of patients. The buildings cost \$300,000 and have a capacity of from three hundred to three hundred and fifty patients. In 1895, \$20,000 was appropriated for building an annex for negroes, providing for one hundred patients. The annex is now (1897) nearly completed.

Dr. J. B. Jones died November 15, 1890. He was succeeded by Dr. John E. Douglas, the present superintendent. Although so recently established the institution has as many patients as it can well accommodate.

LOUISIANA.

For years as many as sixty insane patients were cared for in separate wards in the Charity Hospital at New Orleans. In the report of that hospital to the senate and house of representatives of Louisiana in 1845 it was strongly urged that provision be made for the insane then confined in the hospital. It was also recommended that the place chosen for the site of the proposed asylum be removed from the city where the "advantages derived from rural beauty and profound solitude can be obtained." Such appeals had their effect, and on March 5, 1847, the Governor approved an act to establish an insane asylum in the State of Louisiana. According to this act a board of five administrators was appointed to provide buildings and accommodations for the insane at Jackson. Not more than \$10,000 per annum was allowed for the support of the institution. The asylum was ready for occupancy about the middle of November, 1848, when eighty-five patients were removed from the hospital in New Orleans to Jackson. In the first report of the board of administrators, dated January, 1848, we read: "The land on which the asylum is located is within convenient distance of the business part of the pretty village of Jackson, and at all times of easy access to the same; but separated from the noise and bustle of the village by a valley and small stream, which renders it sufficiently secluded to protect the patients from the annoying gaze of the idle and curious." There are about one hundred and fifty acres of land owned by the asylum, one hundred well timbered, and the balance enclosed for the use of the patients. The buildings of the asylum consist of two wings, each ninety-four feet in length and forty-eight feet in depth, three stories high. A supplemental act was passed in March, 1848, appropriating \$20,000 for the completion of the building then under contract. I learn from an early report that employment was recognized as a valuable means of treatment, though for its bearing upon legislation the economical side was dwelt upon.

Dr. Preston Pond was the first physician of the institution and James King its first superintendent. This arrangement was in accordance with the practice of the first stage of asylum evolution. The institution also received idiotic and feeble-minded youth and criminals, probably from the beginning. Up to 1858 there had been more than six hundred admissions. The average number of patients had been, for several years, over a hundred. In that year the annual appropriations of the legislature for the support of the institution were about \$20,000, and there were in the asylum one hundred and twenty-four patients; of these, nine males and three females were pay patients. Among the State patients were eight free persons of color. Two-thirds, at least, of the patients were of foreign birth, principally Irish and German, and these were mostly brought from the city of New Orleans. Dr. J. D. Barkdull was superintendent in 1857. During the period of reconstruction, because of the injunctions upon the State treasurer against issuing the appropriations, it became necessary at times to raise funds upon the private security of the superintendent and others. At one period so great was the distress that the officers were tempted to throw open the gates and let the patients go forth to beg their daily bread. Dr. J. W. Jones was superintendent at the time, and it was mainly through his importunities that such a calamity was averted.

In 1879, owing to the inadequacy of accommodation for patients at Jackson, the city of New Orleans was compelled to make provision for its own insane. There were also many insane confined in the parish jails. Brick were made in part by the labor of patients, and the foundation of the extreme west wing was laid and almost completed by 1882. Dr. A. Gayden was superintendent from — to 1897, when he was succeeded by Dr. George A. B. Hays, who is now in charge.

MISSOURI.

The State of Missouri began her work for the insane at about the time in which so many Southern institutions were established. State Lunatic Asylum No. 1 was located at Fulton and opened for the admission of patients in 1851, under charge of Dr. Turner R. H. Smith, of Columbia, Mo., who remained in charge until 1861 when, owing to the disturbed condition of affairs the

asylum was closed for two years. In 1863 it was reopened, and Dr. Smith was again made superintendent, but resigned at the end of his term in 1865. Dr. Rufus Abbott, first assistant, temporarily succeeded until October 26, 1866, when Dr. Charles H. Hughes, of St. Louis, who had served for more than a year on the board of managers, was elected superintendent. He served the regular term of two years, and was reelected for a second term of five years, but after serving three years he resigned, and traveled for a time to recuperate his shattered health. On his return he took up his residence in St. Louis, and began his professional life anew, founding the *Alienist and Neurologist* in 1880, which he still edits, and engaging in the practice of neurological and psychological medicine. During Dr. Hughes' incumbency the institution was materially advanced in the direction of the needs of the modern hospital. Tramways were placed in the basement, a large gymnasium and bowling alley were built, improved cooking, heating and laundry apparatus were supplied, and post-mortems on the brain were conducted. He was a believer in therapy for melancholia, in music, labor, recreation, a liberal dietary, and in the law of kindness to all. He says, "The dietary of an insane hospital should not only be wholesome, but substantial and abounding in variety. The clothing of a patient materially influences the result of treatment, music and recreation play an important part, and patients are frequently curative of each other." In those atonic states of the nervous system accompanying melancholia and hysteria, he said, in 1860, "No tonic proves so speedily and certainly reconstructive of weakened nerve power as nuxvomica, iron and opium, combined as circumstances may require, with aloin and proto-iodide of mercury." Beginning at page twenty-three of his report for 1868, his chapter on "Treatment" is fully up to date, and is somewhat in advance of the prevailing therapeutic skepticism of that time in our hospitals for the insane. He also in 1870 recommended separate provision and specially constructed hospitals for the epileptic insane, with rubber cushioned walls and floors, and without exposed heating coils.

Dr. Hughes was followed temporarily by Dr. John Howard, of Fulton, and he in 1872 by Dr. Smith, who remained in charge until his death in 1885. Dr. Smith was a Kentuckian by

birth. He received his medical degree from Transylvania University. He removed from Kentucky to Missouri, and was engaged in the practice of medicine in Columbia when he was first invited to take the superintendency of the asylum. He was a man of fine presence, strong intellect, modest, firm, and gentle; was conscientious and philanthropic, and in every way qualified for his responsible place. He was succeeded by Dr. W. R. Rhodes, and he by Dr. Le Grand Atwood, who was followed by Dr. R. S. Wilson. Dr. Warden, who succeeded Dr. Wilson, remained in charge until a few weeks ago when he was replaced by Dr. Coombs, a homeopathic physician.

During the month of April just passed, by an unprecedentedly autocratic edict of the Governor, this institution passed entirely into the hands of the homeopaths, members of the board being summarily removed for that purpose, the position of druggist being abolished, and the entire medical staff made up of young novices in psychiatry, contrary to the statutes of the State which provide that the "Superintendent shall be a physician of knowledge, skill, and ability in his profession, and of special skill and experience with the insane."

The asylum buildings are located on a tract of land of five hundred and forty acres; are of brick, built on the Kirkbride plan and are commodious and attractive. The asylum is supplied with water from a well one thousand feet deep, and has all the equipment necessary to make its work effective. It now has six hundred and twenty patients. The growing population of Missouri, and its wide extent of territory, led the legislature to provide for a third asylum, which was located in southwestern Missouri at Nevada. It was opened for the reception of patients in 1887. It was well equipped from the beginning. Its buildings are comely and commodious, and admirably designed for the work the asylum has to do. The asylum has under its charge at this time five hundred and seventy-seven patients. It is maintained partly by the counties supporting the pauper patients, and partly by those who are able to pay. There is a large, productive farm connection. Dr. R. E. Young was its first superintendent, and he was succeeded by the present incumbent, Dr. J. F. Robinson, a graduate of the Missouri State University and of Jefferson Medical College. The institution seems to be well equipped and admirably managed

ARKANSAS.

Up to 1883 the insane of Arkansas were confined in so-called poor-houses and jails. Then an institution for their relief was established, largely through the influence of Dr. P. O. Hooper, the present superintendent, who was President of the board of trustees. Dr. C. C. Forbes, who was superintendent of the hospital at Lakeland, Ky., was chosen superintendent, and held the position for over two years. Dr. Forbes having resigned, Dr. Hooper was placed in charge. New buildings were erected, and the asylum originally designed for two hundred and fifty was enlarged until six hundred patients were housed within its walls. After holding the office of superintendent for nine years Dr. Hooper resigned. He was succeeded by Dr. Robertson, who vacated the office after a three years' term, and Dr. Hooper was again placed in charge. The institution is located at Little Rock, and receives whites and negroes alike.

TEXAS.

An act creating the Texas State Lunatic Asylum was passed August 28, 1856. In May, 1857, Governor Pease appointed as superintendent of construction, Dr. J. C. Perry, who, however, remained in charge for one year only. The institution was located upon a slight elevation two and one-half miles north of Austin. The buildings were finished in the winter of 1860, under the supervision of Dr. B. Graham, who was an appointee of Gen. Sam. Houston. The institution was organized and opened in March, 1861. A noble beginning was thus made, but its usefulness was destined to be hampered and checked for years, by war and its consequences. Dr. Graham was superseded early in the war, and from 1861 to 1869 nothing was done in the way of adding to or improving the buildings. In that time three or four different persons held the superintendency, and Dr. Graham in 1869 held his third commission. In that year the average number of patients was seventy, of whom three or four were colored. The law gave recent cases the preference over those of long standing. In 1871 there was a combined hostility by the State comptroller and State treasurer against the board of managers and superintendent. The credit of the institution was finally so impaired that there was danger of its being forced to turn patients out and abandon its work.

Dr. G. F. Weisselberg, the superintendent, in 1871, memorialized the legislature for means to build, saying, "A State that can expend millions of dollars for public purposes such as railroads, should be able to spend \$60,000 to found a home for this most unfortunate class of humanity." The legislature did not respond to this appeal. During the first eighteen years one thousand one hundred and eighty-nine patients were admitted. From the close of the war there were incessant but ineffective demands upon the legislature for the means to provide more accommodation. In 1879 Dr. W. E. Saunders, then superintendent, asked for \$50,000 to complete the west wing according to the original plan. He was given \$11,000 for improvements, and out of this sum it was expected that the additional number of patients would be supported. The institution is badly crowded, and from the report of the superintendent it appears that more than half of the applicants for admission during the past year were rejected for want of room. The present legislature is making provision for a badly needed addition to the asylum. There are now five hundred and ninety-one white and one hundred and nine colored patients. The institution is supplied with electric lights and an abundance of water, by contract. There is a large farm and garden connected with the asylum.

In 1883 an asylum was located at Terrell, in North Texas, and placed under the charge of Dr. D. R. Wallace. Dr. Wallace has had more experience, and perhaps has done more for the care of the insane, and served longer as superintendent, than any other man in Texas, his term of office being about thirteen years. The institution has a capacity of eight hundred and fifty patients, is well equipped in every way, and has been pronounced, says Dr. Wallace, an institution of typical excellence. Dr. Gaillard is at present in charge.

The Southwestern Hospital for the Insane was located at San Antonio and opened for the reception of patients April, 1892. It has six hundred and forty acres of land beautifully located on the banks of the San Antonio river. During the last session of the legislature \$170,000 was appropriated for new buildings to accommodate three hundred white and two hundred colored patients, and also an infirmary. It has an abundant supply of water from the river. The number of patients in the asylum at the close of the last fiscal year was two hundred and seventy-

one. Dr. W. L. Barker was superintendent for the first three years of the asylum's existence. Dr. Worsham followed him for one year, and now Dr. McGregor is in charge.

FLORIDA.

The insane of Florida were cared for in the asylums of other States—Georgia, South Carolina and Alabama, at the expense of Florida until 1877. Georgia had received the larger number of the patients, but the legislature of that State having ordered the return of the patients not resident citizens on account of the crowded condition of the Georgia Asylum, Florida decided to establish an institution of its own. An old fortress with its barracks was chosen. It was located in the western part of the State near the Chattahoochee river, in the village of Chattahoochee. It had a capacity of two hundred and fifty patients, and has since been enlarged until it can provide for seven hundred and fifty. There are at present within its walls three hundred and eighty-four patients. The asylum has had in the twenty years of its existence eight superintendents, and is now in charge of J. W. Trammel, layman, as superintendent, and Dr. L. D. Blocker, physician.

THE COLORED INSANE.

In one particular alone does lunacy administration at the South differ from the same problem elsewhere in our country. What the race problem is to our whole section, so is the question of the colored insane to our specialty. Provision for this class has always been a separate and peculiar problem. Before the war there were, comparatively speaking, few insane negroes. Following their sudden emancipation the number began to multiply, and, as accumulating statistics show, is now alarmingly large and on the increase. This is not the place to enter into an inquiry as to the etiology but only to recognize the fact, and show how earnestly State administrations are striving to meet it.

We have been confronted with the question of providing for a class emerging from servitude, of different race, habits, instincts, and training. The alien pauper insane of the great centers of population, North and West, may in a measure represent our insane negroes, the burden of whose support has fallen upon their former owners, themselves struggling to rise from the impoverishment of war.

Those authorities who have given not only most thought to the subject, but who have also dealt with it practically in our asylums, have been unanimous in the opinion, that the separation of white and colored patients is to the advantage of both races. The distinction has been made for social reasons alone. Consequently we find to-day in most Southern asylums four departments, whereas in other institutions two suffice. Virginia and North Carolina have entirely separate hospitals in the center of the negro population near the Atlantic seaboard. This policy has not been deemed advisable in other States, partly for economical reasons, but largely because the negro population is more uniformly distributed.

Even the existence of insanity in negro slaves has been questioned. But insanity was common enough to require special provision for the care of insane slaves by the provincial council of South Carolina in 1745, and the pressing need of means for their accommodation is shown by the early records of our asylums as they were successively established before 1860.

Prior to the civil war in the asylums of Virginia, Kentucky, South Carolina, Maryland, Louisiana and the District of Columbia, colored insane were received as patients. In those days the accommodations for negroes were probably not adequate, but a generation ago our predecessors began the work, which we of a later day have in some States not yet been able to carry to the consummation so devoutly to be wished. Among the pioneers in caring for insane negroes may be mentioned Stribbling and Galt of Virginia, Chipley of Kentucky, Trezevant and Parker of South Carolina, Steuart of Maryland, and Nichols of the District of Columbia.

Following their emancipation the negroes have become subject to the same penalties that other races have paid for liberty, license and intemperance. Among those penalties insanity is not the least. A recent estimate based upon the records at the census office shows that brain disease in the negro, as compared with the white, has increased from one-fifth as common in 1850 and 1860, to one-third as common in 1870, and one-half as common in 1880 and 1890. Or, stated in another way, the ratio of insanity per million among the negroes has risen from one hundred and sixty-nine in 1860, to eight hundred and eighty-six in 1890.

Until a recent period, the Southern negro was in a great measure exempt from both insanity and tuberculosis. To-day, associated with insanity, we find tuberculosis alarmingly prevalent among our colored patients, especially females. As a race their mortality is greater than among the whites. Medication is of little effect. The tendency of the disease is towards a rapid and fatal decline. If we cannot cure, possibly we may prevent. To this end isolation of tuberculous cases is the most rational method at our command.

ASSOCIATION OF SOUTHERN HOSPITALS.

The superintendents of a number of Southern hospitals of contiguous States, in sympathy with each other because they were subject to the same dangers, responsibilities, and duties, have often considered the feasibility of an organization representing and favoring the interests peculiar to the institutions in their section. As the result of suggestions and opinions expressed at various times, an informal meeting of the Southern members of the Medico-Psychological Association was held in Chicago in 1893. A committee was appointed to consider the advisability of forming an association of Southern hospitals for the insane, and to report at the next meeting of the National Association. The following year in Philadelphia a plan of organization was proposed, and a constitution submitted. These were approved and an association formed. The association has now held two meetings, one at Atlanta, Ga., in 1895, and one at Asheville, N. C., in 1896, and seems to be entering upon a useful career.

The principal aim and object of this association is to enable us to meet the class of troubles peculiar to Southern institutions, to give our specialty in this section an awakening and progressive tendency, which is so much needed and to which a combination of efforts must contribute to the cause of psychiatry and benefit in many ways our own institutions, and in many particulars that are peculiar to them—such as arise, for instance, from climatic conditions, decided difference in population, limited financial support, and especially from political interference. It is also believed that many advantages will be obtained by the hospitals associated together that could not be gained from the larger National Association, and that the success of one would contribute to the other.

ADVANCES.

I am glad to say from a general survey of the work in the Southern States, that in no section of the country is there a more intelligent and earnest effort made for the insane than is now being made in the South. All honor to the memory of those who were prominent in the early care and treatment of the Southern insane. The moral grandeur and blessed results of their work can never be estimated. We have taken up their unfinished work, and made radical changes and improvements, which have been continuous and progressive, and which have added greatly to the comfort and welfare of the insane.

In my judgment, one of the most rational and humane changes made in the care and treatment of the insane is the abandonment of mechanical and chemical restraint as a general thing. Improved accommodations can be seen in every section of the South. Among other advances may be mentioned the extension of greater liberty to the patients; hospital buildings or wards where the feeble and sick have special care and attention; associated dormitories, better night supervision, training schools which supply the hospitals with educated nurses, colonies, congregate dining-rooms, amusement halls, chapels, libraries, reading and working-rooms for convalescents, detached buildings on the cottage plan with home-like surroundings, and every possible means to divert and lead the mind into normal channels; careful and systematic employment, indoors and out, shop and field.

There have been in the past two decades many advances in the clinical, pathological and therapeutic methods, as well as in construction and administration. It was not until about 1890 that the Southern hospitals may be said to have really recovered from the vicissitudes following the periods of war and reconstruction. The question of bare maintenance and provision for a rapidly increasing population had been paramount. The buildings erected in the last generation have been absolutely free from architectural effect. There has been such need of economy that even to-day many asylums have not a sufficient nursing staff. For a generation it was indeed a struggle for existence. The study of my subject has taught me that the best and most far-sighted alienists have not proven themselves good

prophets when they have undertaken to dogmatize or prophesy about the increase of insanity or about the future policy of States in the management of the insane.

The dogmas of 1850 have ceased to appear annually as appendices to our asylum reports. We have learned that while an asylum of less than two hundred and fifty patients may still constitute an ideal institution, yet the policy of a State may demand the maintenance of a colony of ten times two hundred and fifty. I trust, however, that you will pardon me if I attempt to draw some conclusions from my study of the evolution of Southern asylums. It appears to me that about 1890 our institutions entered upon an era which may be termed the beginning of the scientific period. In the State hospitals generally infirmary wards were introduced, and training schools for nurses were established. These adjuncts are the first essentials of hospital life. Several of our institutions have well equipped, well managed pathological laboratories under skilled neuro-pathologists. From these we expect scientific progress. The separation of acute and chronic insane into different institutions has not so far been adopted into the policy of any Southern State. The further segregation of the colored insane will, in time, no doubt become a more important problem. Meanwhile most Southern States have yet to solve the question of establishing schools for the feeble-minded, asylums for insane criminals, colonies for epileptics, and hospitals for inebriates. Although all these questions have been discussed in many States they have not yet secured following sufficient to obtain legislative aid for their consummation. And yet, before our asylums can be regarded as firmly established on a scientific basis, all these classes must be separated from the insane proper. Until recently, perhaps too much attention has been paid by neuro-pathologists to the study of nerve tissues, to the exclusion of those of the glandular structures of the body. While such work has been of great value, we are beginning now better to understand that insanity is largely only a symptom and that many forms of mental derangement present no pathological changes capable so far of demonstration. The intoxication of the cellular nerve elements by auto-infection has of late received much close study, and is still being investigated by many of our best workers, as is evidenced by the programme of this meeting. The kidneys of the

insane seem to be affected to a much greater degree than are those of persons dying sane. The results obtained in laboratory investigation upon this subject by Dr. Bondurant, of the Alabama Bryce Hospital, Dr. Blackburn of the Government Hospital, Dr. Richardson of Mount Hope, and Dr. Oertel of the Georgia Lunatic Asylum, as well as others, demonstrate the vast importance of careful urinalysis in all cases of mental and nervous disease, and inspire the hope that where timely diagnosis of renal disease is established the patient may be cured of this condition, and at the same time of his mental trouble.

The advances of the past few decades have been such that we are warranted in sustaining the hope that it is within our power to penetrate the mysteries which still enshroud so many vital questions, and come at last to a perfect understanding of this wonderful, complex nervous system and its subtle life force. The blood is now receiving the close attention of hundreds of eager, trained observers. We have learned the role of the leucocyte which for a long time escaped notice altogether, and now differentiate at least five varieties of this cell, some writers describing still other forms. Whatever of good emanates from the laboratory must always depend largely upon clinical research and data. The one is a check upon the other. It is to be hoped that the day is not far distant when every hospital for the insane in this broad land shall boast its laboratory where may be carried out the clinical and post-mortem studies which are of so much interest and value to us all.

POLITICS AND ASYLUMS.

I have given the best history or sketch obtainable with the data at my command of the early care and treatment of the Southern insane and those that were prominent in their care, and referred in a general way to some of the advances that have been made, without going into details. The thing that is most to be deplored and apprehended is the growing tendency to subject the care of this afflicted class to political spoilsmen, a flagrant injustice both to the insane, and faithful and efficient officers. It is a violation of all the dictates of humanity, a blot and reflection upon our Christian intelligence, that such a sacred, humane and Divine trust should be carried into politics for selfish considerations. The histories I have presented bring

clearly also to view the fact that those institutions sustain the most useful relationship to the public in which the officers have remained longest in service.

As early as 1848 this Association placed itself on record as deprecating the application of the spoils system to insane hospitals. Since then our readers and speakers have frequently discussed and deplored any relationship between politics and asylums. In this sketch I have shown how in the early days positions in asylums were little sought after. With the growth of the institutions and increase of emoluments the positions formerly contemned began to attract the attention of the working politicians. From this cause have risen the chief evils of our hospital system. If we are entering upon a really scientific period then these hospitals must be freed from such corrupt and unscientific methods. We must no longer content ourselves with "deploring" the fact; we must combat the evil for the cause of science which is the cause of humanity. The public must be taught that these hospitals cannot become the centers of scientific research, and thus truly progressive and curative as is their purpose, unless their physicians are encouraged and assured of permanent tenure of office.

Our best medical schools declare four years short enough for a man to acquire sufficient knowledge and skill to practice medicine and surgery. The general public have been quick to appreciate the benefits of a more rigorous curriculum. We may rely upon the broad common sense of our respective communities to sustain all efforts that point to a like improvement in the administration and service of our insane hospitals. Superintendents are made, not born. It requires years of conscientious and faithful effort to acquire experience sufficient to deal scientifically with the manifold problems of asylum life. A recent change in the political complexion of one of our States threatened to remove a well recognized authority in our specialty. While the matter was under discussion it was well said that if the new Governor should be fortunate enough to select the best general practitioner in the State for the position, it would take that physician just fifteen years to stand where his predecessor had stood. With such demoralizing methods can we expect progress? In none of our Southern States has the question yet reached the stage of statutory importance, although

our best governors and law makers are familiar with the evils of political interference in our institutions. To further the end we have all so devoutly wished, I would recommend the enactment by each State of such a statute as that recently adopted by Indiana. If this generation makes such provision statutory, the next will make it constitutional. The Indiana law reads:

“Boards of trustees shall in the employment of superintendents, and confirmation of assistants and other employees, take into consideration only the qualifications and fitness of the persons selected to fill such places, and no person shall be selected or employed to fill any of such positions on account of his political belief or affiliations, and no superintendent, assistant or employé shall be dismissed from service on account of his political belief, faith or affiliations, and in the employment or dismissal of such superintendent, assistant or employé, the qualifications, character, merit and fitness shall be the only matter to be considered by such board of trustees in the selection or retention of such employé.”

In conclusion allow me to thank you for the distinguished honor you have conferred upon me.

ANNUAL ADDRESS.

ADVANCES IN NEUROLOGY AND THEIR RELATION TO PSYCHIATRY.

By B. SACHS, M. D.,
New York.

Members of the Association:—Your kind invitation to deliver before you an address which shall bear upon some subject of interest to all of us has been accepted most willingly, with a full sense of the honor thus conferred, and the responsibilities it entails, upon me. You have summoned; I must obey; and in this act of obedience find my excuse for venturing to present to you a few reflections upon matters which have surely engaged the serious attention of every member of this Association. Without wishing to promulgate any startling doctrines, I may be permitted to formulate my reflections on the supposition that even familiar facts may at times be repeated for the sake of the lesson they are intended to convey.

In view of recent experiences, indeed too recent to be entirely forgotten, you have evinced considerable courage in inviting another neurologist to appear before you. Evidently you are not willing to concede that there is a "state of war" between neurologists and alienists. Far from being foes or even antagonists, we are struggling for a common cause and should be united against the common enemy—the diseases of the nervous system. Do what we will, we cannot separate diseases of the mind from the organic diseases of the brain and of the spinal cord. No one can be thoroughly devoted to a study of the latter class without at the same time taking a deep interest in psychiatry. I have no doubt that others, like myself, would never have entered the ranks of neurologists if they had not been impelled to the study of nervous affections by a special fondness for the analysis of mental conditions. If there be any differences between us, we must concede that you are our superiors, at least

etymologically. As *psychiatrists* you are healers of the soul, while we *neurologists* are mere students of the nervous system. Your aim would appear to be a higher one, but I am certain, now that an "entente cordiale" has been established, that you will be amiable enough to allow that we, too, heal a patient or two every now and then, or if we do not succeed, we are constantly engaged in making desperate therapeutic efforts. It is your privilege to be devoted to the noblest of all specialties, if nobility be gauged by the dignity of the organ whose disturbed function comes within your special province. We neurologists have a speaking acquaintance, as it were, with diseases of the mind, and while we envy you the opportunity that you have of studying the patients and their morbid manifestations through the entire period of disease, we have an occasional advantage over you in seeing the patients in the very earliest period of the disease and in being able to study a goodly number of those who never reach the asylum door. Our studies can, therefore, supplement those made at your institutions, for in spite of all the advances of the day, the importance of clinical observation, carefully recorded, should not be underrated.

One of the foremost alienists* of Europe has said that psychiatry is at this day on the level of the medical sciences of a hundred years ago; that it is based wholly upon clinical studies and not upon a knowledge of the pathological anatomy of the diseased organ. Granted that this is true, and it is true in a limited sense only, the accusation cannot be construed as a reproach to those of us who are devoted to the study of mental diseases. It is simple proof that the clinical observation is far more difficult than in any other series of organic diseases, and that the structure of the brain is so complex that its morbid pathology cannot, with the aid of past and present methods, be studied as easily as the changes that occur with diseases of the heart, the lungs, the liver, and the spleen. Nor is it desirable that careful clinical studies of the various psychic disorders should be discontinued or discouraged, for it may confidently be predicted that, in spite of the promises held out by the psychologist and the anatomist, further progress in psychiatry will depend in no small degree upon the most detailed studies of the insane in all their varying moods and conditions. We have at

* Wernicke, *Grundriss der Psychiatrie*, Leipzig, 1894.

all times received valuable aid from physiologists and psychologists, and we acknowledge gratefully the value of their services which have helped us to determine the proper methods of analyzing morbid mental phenomena. It is equally true that the alienist may be able to furnish many a hint to the psychologist which he should be willing to adopt, however elevated his station may be over that of the ordinary mortal. The study of the evolution of language was not satisfactorily advanced until the *dissolution* of speech by disease shed a flood of light upon the nature of speech processes; just so the character of our common mental processes will become more intelligible to us if we analyze with the greatest care the *dissociation* of ideas as evidenced in various mental diseases. What a harvest there would be for any one who would have the patience to record the morbid psychology of general paresis, of paranoia, and of acute mania!

It is a pleasure to be able to assert that the asylum physicians both here and abroad are thoroughly alive to their duties as physicians and clinical teachers. There is ample evidence also that the alienists are making every endeavor to solve the mysteries of the morbid anatomy of insanity, and your asylum reports are fast becoming storehouses of useful inquiries into the morbid anatomy of the brain. The pathological report issued only a few months ago by the Illinois Eastern Hospital for the Insane deserves a special mention for the excellence of its studies, and the work of Dr. Meyer should be emulated by the pathologists of other institutions. In my own State the importance of pathological work has been recognized by the creation of a State laboratory. Under its efficient chief (Dr. Van Gieson), excellent work is certain to be done there, but it will not be amiss to suggest in this connection that if the State institutions are to be truly benefited by such a central laboratory the younger asylum physicians should be detailed at stated periods for a course of study in pathological anatomy. And such studies should be conducted in a broad and generous spirit; I was almost tempted to say, conducted in the good old-fashioned ante-Koch days, not so much with a view of finding support for doubtful theories, as of giving the physician a thorough knowledge of the fundamental facts of pathology which shall enable him safely to interpret clinical data in their relation to the morbid changes underlying disease. A State laboratory should also, to my thinking, not wholly sup-

plant pathological work to be done in the asylum itself. The full value of such work can be appreciated best by those who have had an intimate knowledge of the manifestations of the disease which have been due to the special findings in a given case. It is proper, too, that those forms of mental disease which are attended by tangible morbid changes should be studied first. In the excellent report referred to before, senile dementia, general paresis, terminal dementia, and alcoholic insanity have been considered in creditable detail and have yielded some positive results. In time to come the acute insanities and paranoia may also yield equally definite findings. We cannot hope to climb to the top of the ladder at once, and must therefore be content to establish the coarser changes in a few diseases. We should not be in too great haste to establish auto-toxic and other forms of insanity, lest in so doing we disregard the commonest changes in the ordinary forms of insanity. The direction in which the study of the morbid pathology of insanity is to be pushed will be determined best after a short survey of the mechanism by which normal mental action is effected.

We may start with the statement that the cerebral cortex is the organ of mind and that diseases of the mind are due to lesions in the cortex. There may be a difference of opinion as to whether the lesions are organic or functional; but whatever the nature of the disturbance may be, it is generally a diffuse lesion in contradistinction to the localized processes that occur in organic diseases of the brain; yet there are some forms of mental derangement, general paralysis and syphilitic dementia, in which the morbid process is both diffuse and tangible. It is doubtful whether the entire cortex need be involved in any case of mental disease, and certain it is that there are definite portions of the cortex which have more important relations to mental processes than other regions have, as is proved by the development of idiocy in animals deprived of their frontal lobes and by the more frequent occurrence of psychic symptoms with tumors in the anterior third of the brain. It is also worthy of note that in the idiocies of childhood the mental defect is relatively greater if the frontal lobes have been involved in disease or are mal-developed than if the lesion or the defect occurs in the parietal or occipital regions. Large porencephalic defects in the parietal areas are compatible with a tolerably high mental development, whereas a

defective development of the frontal lobes leads to complete idiocy even though the remainder of the hemispheres has attained to normal growth. These differences in the relation of the different parts of the hemispheres to the organ of mind have received much attention during the past few years. Some of the doctrines recently promulgated we can accept, others we must reject.

It was the genius of Meynert* that conceived of the cortex as a hollow sphere upon which the impressions of the outer world were projected and in which they were perceived. These external impressions are carried by various pathways to the endings of these tracts in the cortex. Their terminal stations constitute the cortical centres. No especial structure helps to differentiate one area from another; the difference that exists depends solely upon the peripheral connections of the various cortical areas. Meynert was in full possession of a doctrine of the localization of cortical functions long before it was established by Ferrier, Hitzig, and others, and if we add that he pointed out the tracts connecting the various centres and intimated that they were association tracts, in contradistinction to the projection tracts connecting the cortex with lower parts of the brain and with the outer world, we see that the association psychology which is proclaimed at the present time from the very housetops has not led us much beyond the views of the great Austrian anatomist, who once said within my own hearing, and with a conceit that we can pardon in so great a man, that the discoveries of others were the drippings of his own mind. But were he living to-day he would acknowledge that his doctrines have been advanced a little by the researches of Charcot, Jackson, Flechsig, Wernicke, and some others.

I may presume that every one in this audience is acquainted with the studies which have led to a localization of the various centres in the cortex of man. It is almost superfluous to add that auditory impressions are received in the first and possibly the second temporal convolutions, visual impressions in the occipital lobe, and more particularly on its mesial surface, tactile impressions are received from various parts of the body in the especial areas ultimately governing the motion of these parts, taste and smell impressions are supposed to be received on the

* *Psychiatry*, Am. Edition, p. 136, et seq.

inferior surface of the temporal lobe near the hippocampus. The left third frontal convolution harbors the special motor speech centre and there is also a writing centre which by some is located near the centre for the arm. Of other centres we need at present take no account. In the earlier years after the publication of the studies in localization by Ferrier, Munk, and their followers, we were in the habit of conceiving of the brain as an organ composed of a large number of special centres, each one of which had some function exclusively in its keeping. Goltz alone stood out prominently in his opposition to the prevalent doctrine of the day, and although he exceeded the mark by denying in toto the doctrine of the minute localization of cortical functions, he did excellent service by insisting that the brain was an organ of especial but harmonious parts and that the simplest function, although it may appear to be the result of the activity of a single small area, was in no sense due to such activity alone and that the entire brain, or a greater part of it at least, had a share in most actions, however simple. There is strong reason to believe that the final truth will be found to lie midway between the positions maintained by Munk and Goltz.

If we consider the development of the infant's brain we shall get the best illustration of the manner in which the cortical functions are developed. The brain of the new-born child, and more particularly its cortex, is a blank structure full of potentialities if you will, but without any distinct impressions save those which have been carried to it from its own body. Kussmaul shrewdly observed that even the foetus in utero must have become possessed of certain perceptions and of sensations attendant upon definite movements, those of turning and of swallowing for instance. Soon after birth the infant learns to distinguish between its own body and the world beyond it. Contact of a strange finger excites but one tactile sensation; contact between two parts of its own body excites two tactile sensations, one from the touching and the other from the touched part (Wundt, Meynert). A sound striking the infant's ear produces an auditory impression, but as soon as it hears its own cry the auditory perception is attended by the sensation of its own muscular vocal effort. The sensations of its own body are so much more frequent, so much more intense, and so much more constant that they outweigh those received from the outer world and by their repeti-

tion and intensity help to establish the conception of its own individuality. It is of less interest to us for our present purposes to show how the conception of the ego is engendered than to illustrate the importance of sensory perceptions.

The sensory stimuli are carried, as was said before, by the various pathways to the terminal areas in the cortex. These areas, or rather the cells contained therein, are in some way so affected by peripheral stimuli that a perception and a memory of the sensations are established in accordance with the varying character of the peripheral irritant. As the majority of things, animate and inanimate, are so constituted as to impress the child's brain by more than one sensory pathway, the various sensations carried inward simultaneously become associated with each other and thus help to form the concept of an object. I need only instance the form, color and odor of a flower; the taste and sight of milk. Frequent repetition of the same impression helps to form the very earliest concepts; so the child soon realizes the meaning and importance of nurse and mother. In every instance the sensory impression is the primary one, but sensations of movements soon become intimately associated with this, as when the child is taught to suck as soon as it receives the tactile impression of the mother's or nurse's nipple. The value and precedence of sensory impressions are particularly evident in the acquisition of language, and pardon me for referring to a well-known subject, but the entire subject of aphasia has a fundamental importance in its relation to normal and morbid mental processes. The child receives auditory impressions for months and months before it acquires the power of articulation; as soon as it has acquired this power it comes into possession of another distinct set of sensory impressions, the sensations of innervation which accompany the act of articulation and which are repeated with every effort. The frequent repetition of these impressions and of special sensation of innervation help not only to form a definite concept, but in the course of time the association between these various sensory memories or images is so firmly established that excitation of any one image may be sufficient to call up the entire concept. The association of concepts in the development of language becomes still more complicated as the visual images of the printed or written word and the memories of those muscular efforts employed in writing

a word or in reading aloud are associated with the tactile, olfactory, or visual images of the object denoted by a given sign, the word. Would it not be absurd to claim that speech is the special faculty of any one small area? In pronouncing the simplest word or in reading aloud and understanding a printed sentence almost every part of the hemisphere becomes engaged. However complex the process may become, it still remains a matter of sensory memories or images which have been deposited in the cortical cells of different areas, but these special images would be entirely useless if they had not been permanently and definitely associated with one another. In passing let me expatiate a moment upon the secondary effects of sensory stimulation upon the production of pleasure or pain according to the intensity of irritation. Every such stimulus is attended by pleasurable sensations until it has reached a certain intensity and if carried beyond this point becomes painful. Excessive auditory irritation, loud noises or excessive visual impressions (a very bright light) become painful. The secondary effect upon the cortical areas is also registered, or else we would not be ready to guard against such disagreeable stimulation when repeated.

We have now advanced sufficiently to maintain that the ordinary psychic process is developed in the following order: First, peripheral stimulation; second, perception in one or more sensory areas; third, formation of a concept; and lastly, a motor discharge.* The last need not always follow, and the concept may be made up of many distinct perceptions and of the memories of previous experiences. It is the constant association between the various sensory memories of the past and the present that is by far the most important factor in conscious thought. Upon the one fact of association the psychology of our day chiefly depends, and one of the latest writers on psychiatry (Ziehen) maintains that the association psychology is sufficient to explain all the experiences of clinical psychiatry, and another still more eminent writer expresses the opinion that the disturbance of the association tracts alone suffices to explain abnormal psychic processes. But catch phrases are particularly dangerous. Would this not be equivalent to saying that in a telegraph system the wires are the only important part and that an interruption in the service can never be due to trouble at any station? If there are

* Cf. Ziehen, *Psychiatrie*, etc., Berlin, 1894.

association fibres, the parts which they help to bring into contact with one another are surely important enough, and the only statement that could be made with a semblance of truth and probability is that, as the association tracts are proportionately greater in extent than the central stations, the former may be more frequently affected than the latter.

Will it be pertinent to inquire whether we are in possession of any anatomical facts which may serve as a foundation for a system of psychology which is based upon definite sensory pathways, distinct cortical areas and well-defined association tracts? The most important contribution to this subject has been made during the last two years by Flechsig;* but it is due to the able author and to the important bearing which his facts would have upon the entire development of psychiatry, that his statements should be received willingly but should be analyzed in a fair but critical spirit.

More than twenty years ago Flechsig showed that during the period of development the nerve fibres which have a common function acquire their medullary sheaths at about one and the same time. By the study of the different stages of foetal development definite tracts in the brain and spinal cord were clearly established and have been corroborated by other methods. A closer study along these same lines has brought to light the interesting fact that the sensory tracts which are first needed in normal mental development are the first to be developed at about the ninth foetal month and that of these the first system contains those fibres which conduct ordinary somatic sensations. Remember if you will Kussmaul's statement regarding the earliest impressions received by the child in utero. These sensory fibres pass into the cord by the posterior roots and reach by diverse paths the posterior third of the internal capsule; thence they pass into the parietal region of the cortex, taking up what were known hitherto as the motor areas of the cortex and some of the tissue beyond. Borrowing a term suggested by Munk, Flechsig calls this area the *Körperfühlsphäre*, which I venture to translate as somatic sensory area. These same investigations will help by-the-by to settle the long mooted question whether or not the motor area is also sensory in character. It is primarily

* Flechsig's newer theories are to be found in two monographs: *Gehirn u. Seele*, Leipzig, 1896, and *Die Localisation der geistigen Vorgänge*, etc., Leipzig, 1896.

sensory, a justification of the views reached by Bastian and others years ago. A second sensory system is developed about one month after the first system, its fibres passing from the lateral nucleus of the optic thalamus into the same somatic sensory area, into the paracentral lobule, into the first frontal convolution, and some fibres pass into the gyrus fornicatus and the cornu Ammonis—the centres for the senses of taste and smell, functions that are indispensable to the young infant. A third system of fibres exists in the internal capsule and has connections with the lateral nucleus of the optic thalamus; it is developed within the first three months of post-foetal life, and of this system some fibres pass into the third frontal convolution, some into the second frontal, others into the first frontal, and still others into the gyrus fornicatus. If all this be true, there is only one surprising fact, and that is that fibres to the third frontal convolution, the motor speech area, are developed so long before they are put into use; for if there is no accurate correspondence between the time of development of the medullary sheaths of the fibres in a definite cortical region, and the function which that region superintends, the arguments derived from the developmental method lose a very substantial support. By a study of the comparative embryology of the vertebrate series, Edinger has shown that in them the olfactory tract is the first to be developed, but in them this tract is of far greater importance than in man, in whom the olfactory fibres do not attain to their development until one month after the general somatic sensory fibres have acquired their medullary sheaths. Next in chronological order comes the optic nerve with the optic tract and the radiation of Gratiolet. The auditory tract is the last one of the special sensory pathways to be developed, and its termination in the first temporal convolution is too well known to be insisted upon.

The child does not perform volitional movements until long after birth; we can therefore understand readily enough why the chief motor tracts, the pyramidal, do not obtain full development until several months after birth. The fibres engaged in simple reflex movements in the spinal cord and the medulla are developed at an earlier period. The preceding statements of Flechsig, though in general keeping with the conclusions to be derived from other methods of investigation, should be carefully analyzed. A critical microscopic study of the brain of the foetus

and of the young infant is urgently needed and will well repay any one who will make serial sections of the entire central nervous system with reference to the development of the various sensory tracts. However great our confidence may be in any one author, such important investigations need corroboration, and it is a curious fact that the developmental method of Flechsig has been employed by very few workers who have not been in touch with the Leipzig laboratory. Assuming the truth of Flechsig's propositions regarding these sensory areas, we must refer with somewhat bated breath to his more recent theories which refer to the functions of the remaining parts of the cortex. These are essentially "*intellectual centres*." One month after birth, says this author, the intellectual centres are unripe, wholly bare of medullary substance, while the sensory centres, each by itself and independently of the other, have been matured. After the structure of the sensory centres is completed the intellectual centres exhibit the first signs of life and by degrees innumerable medullated fibres grow from the various sensory areas into the intellectual centres, unite with each other, and terminate in the cortex in close juxtaposition to one another. These centres contain a special apparatus associating the various sensory areas, and they ought to be designated as association centres. The full significance of all this dawns upon us if we add that Flechsig himself insists that disease of the association centres is the chief cause of mental derangement. For the present three distinct association centres are to be established: A frontal or anterior, an insular or median, and a parieto-occipito-temporal or posterior association centre. The character and function of these will vary according to the sensory centres which they connect directly.

These new doctrines are strikingly original unless we may claim that they have been foreshadowed in the description of association bundles which have been recorded by Meynert and Edinger some years ago. Ever since these association tracts were known they were supposed to be the important lines of communication between various centres. The term centre, which had always been used in cortical physiology to designate a terminal station, would seem an unfortunate one in reference to association areas; but Flechsig would have us think of these areas as centres, for in his latest pamphlet he states distinctly that he regards the gan-

glion cells of these cortical areas as the central organs indispensable, for instance, to the association of concepts. But can we accept all these new theories in blind faith? It is the prominent connection of the parieto-temporo-occipital association centre with the more important psychic processes that startled me. The existence of important projection systems from these areas to the optic thalamus is entirely disregarded. Certain it is that very large tumors in this part of the brain are not attended by any marked mental changes, whereas even relatively small growths in the frontal lobe are often characterized by changes in the individual's character, by hebetude, stupor, and often by a condition of silliness. I have seen several brains of persons who had died long after the period of childhood, which presented large cysts underlying the entire hemisphere caudad of the frontal region; and such patients had not exhibited any marked psychic abnormality. Such cysts, mark you, are best calculated to destroy the association tracts. If these intellectual centres in the parieto-temporo-occipital region have the importance which Flechsig would attach to them, we should be able to find evidence of a special development of this region in man; but such evidence is still totally wanting, whereas it can be definitely maintained that the greater development of the frontal lobes, including the third frontal convolution, testifies to the fact that in man functions are relegated to this region which are acquired by him and are not possessed by the lower animals. The cortex of the reptile is characterized by the development of olfactory tracts, and its brain has a special facility for the perception and registering of olfactory impressions. The cortex of the bird shows important relations to the sense of sight and less important relations to the sense of smell. In the mammalian series the tactile sphere has been more highly developed, but I can not find any such marked difference between the brains of the highest monkeys and of man as to warrant one in believing that the latter's great superiority in mental development is to be attributed to the evolution of the parieto-temporo-occipital region. On the other hand, it is well to bear in mind that these differences may not be due to differences in gross structure, but there may be differences as yet undetermined in the cellular structure of this large area of the hemispheres. If this point is to be settled, further microscopical studies on the brains of the monkey and

of man are needed. But a still more forcible objection to these more recent views is to be found in the fact that we can hardly suppose that the large frontal area is simply to connect the tactile and other sensory areas with the island of Reil, and possibly the first temporal convolution.

Allowing for the present that the greater part of the hemisphere is composed of sensory centres and of association tracts connecting them, we may stop for an instant to consider the elements which enable the cortex to do the work especially allotted to it. The large cortical cells are unquestionably the sensitive elements to which sensory impressions are carried and in which the special memory or image is stored. The large pyramids are the chief of these cells, but the other smaller cells, particularly those holding an intimate relation to the longitudinal fibres may have other than mere nutritive functions. The cells of one and the same area are brought into relation with one another by the close contact of the dendritic processes and their collateral branches. Meynert proved years ago that the immense number of cells in the cortex of man was sufficient to meet the requirements of the most active mind, so that we need hardly be troubled to decide whether the perception of external impressions and the registering of the same are to be entrusted to the same or to different cells. According to Kaes, the association fibres increase with the age of the individual, and in all probability *pari passu* with his intellectual needs. The association fibres connect the cells of neighboring convolutions, and the larger association systems establish the connection between different convolutions of each hemisphere, while the commissural tracts bring the various parts of both hemispheres into harmonious action with each other.

Before deciding upon the benefits which psychiatry is to derive from these modern anatomical theories, it will be necessary to refer to another novelty—the conception of the neuron, of which so much has been said of late.* The neuron is practically the ganglion cell with all its processes; merely this and nothing more. If it simplify our task at all, it will be by showing that the cell is the all-important element of the cortex; that the causes which affect it affect the fibres emanating from it, and that if

* Since this address was delivered an excellent account of the neuron concept has been published by Lewellys F. Barker, New York Med. Journal, May 15, 1897.

there are diseases of association fibres there must of necessity be diseases affecting the association cells. The conception of the neuron has helped to facilitate our understanding of some diseases, in showing that there is no cardinal distinction between gray and white matter, and it has helped to unravel the mystery which formerly surrounded those diseases that involved almost simultaneously the various systems of white fibres and the gray matter. Proportionately with the growth of the neuron concept the value of systemic diseases is lessened. But I cannot go to the extent of believing, as some seem inclined to believe, that every morbid agent must first attack the cell and through it the fibres. If the neuron is to represent the unit of nervous force, any part of it may be subject to disease; but the effect of such will soon be communicated from one part of the neuron to the other. Nor should we lose sight of the fact that, while the cell and cell processes may be primarily affected, they do not after all lead an independent existence either in the cortex or anywhere else; that their vitality depends upon forces beyond them, and, above all, upon the normal condition of the blood and lymph systems. Monti has shown that the dendritic processes have a special relation to blood-vessels, and that if the blood supply is interfered with, these processes are the first to suffer; that the degeneration begins at the point nearest the blood-vessels, the cell body and the neuraxon suffering secondarily. Valuable as this study of cellular changes is, we should not cry "Eureka" as soon as we have demonstrated cell changes or destruction of cell processes in alcoholic insanity, in general paresis, or in senile dementia. We should inquire first whether these changes are not more often secondary than primary, and I believe that there is still much valuable work to be done in studying the neuroglia and in pointing out the important part played by the blood-vessels in various chronic and acute diseases of the brain and mind. Mendel's observations on the changes induced in the blood-vessels and the neighboring tissue by rapid rotation of an animal and the subsequent development of a demented condition, Tuzek's proof of the disappearance of the tangential fibres are still as important as the later observations which have brought to light the changes in general paresis in the cellular structure of the cortex. We must seek a rational explanation for every morbid process affecting the cortex, and should not

forget that changes in cellular structure may represent secondary and possibly terminal stages of the disease. Let us not be guilty of the error of the bacteriologist, whose own association centres seem to be completely cut off by the perception of a new visual image in the form of a small microbe. I fear that the conception of the neuron has upset some of our previous association of ideas. Nor is it wise to attempt to explain everything by it. Dercum, whose opinions have always received my most considerate attention, has felt called upon to promulgate the theory of a movable neuron. According to him, everything runs along well enough in our system as long as the various cell processes remain in contact with others, but suddenly they retract, the contact is broken, and now various good and evil things befall the individual. He may become paralyzed, hypnotized, may lose his association of ideas, or may merely fall to sleep. The idea is so simple that we wish it could be proved to be true, but does Dercum know whether such retraction actually occurs in the system of man? I grant that it is not inherently impossible, but can any one determine whether the retraction of a cell process is or is not the active stage as in a muscular fibre and the lengthening of it a merely passive condition? And if so, paralysis would result on this theory from cellular activity rather than inactivity. But enough of this; let us accept the doctrine of the neuron and let us pursue our studies in normal and morbid histology with judicial calmness. As soon as we shall have gained a sufficient number of facts, self-evident theories of psychic action will present themselves to our minds, but that day has not yet come.

If your patience has not been inordinately taxed, let me put the simple question: How is psychiatry to be benefited by these newly discovered facts and recently promulgated theories? The facts which we have acquired are relatively few. We know that normal mental action is based upon the carrying inward of sensory perceptions; that such perceptions are deposited in different parts of the cortex at the terminal stations of the various pathways by which they have been conveyed. These terminal stations are connected with each other by association tracts. We have shown that no one area of the brain can be said to be independent of the other, and that the simplest concept results from the harmonious action of different parts of the brain. Simple as

this process seems to be, and the process is simplified by the introduction of words acting as signs of entire concepts, we soon encounter a perfect labyrinth of sensory impressions and association memories which it is difficult to unravel. The commoner symptoms of mental affections can be explained with considerable ease. Thus, hallucinations must be due to irritation of the various sensory centres, the differences between this and normal excitation being the entire absence of peripheral stimulation. On this hypothesis hallucinations of the various senses must be relegated to affections of the respective sensory areas. The hallucinations of vision occurring in the earlier stages of tumor in the occipital lobe prove that such symptoms can be produced in this way. The organic processes are so rapidly destructive that the effect of irritation is soon lost. Illusions can be explained on the supposition that sensory impressions are received but that the memories of the past are insufficient to account for or properly to interpret such impressions. As soon, however, as we attempt to explain delusions we must face a much more serious problem. The existence of a single delusion denotes that there is a most marked change in the perfect correlation of concepts which is characteristic of the normal mind. Interference with the proper transmission of association currents, any change in the rapidity of association action, will help to explain the changed mental attitude in acute mania, in melancholia or in general paresis. The sudden irruption of imperative concepts into that well ordered series of associated concepts which go to make up normal consciousness, can be interpreted in harmony with the association theories of mental processes, but it becomes evident that we leave almost unconsciously the domain of solid anatomical fact and enter into the more or less speculative field of morbid psychology. I grant that the transition is unavoidable, is made quite unconsciously; but there is all the more reason why we should not delude ourselves into the belief that we are still proceeding on the safest possible foundation. We must unite psychology, or still better, physiological, with anatomical methods, and much good will come of this union if we avail ourselves of the newer facts developed from time to time. But do not let us venture into deep waters of psychology unless we are in danger of being stranded by hugging too closely the shores of anatomical science.

Wernicke has in a very ingenious way built up a theory showing that these false concepts or delusions may be due to a false interpretation of impressions received from the outer world, from the individual's own body, or from his own mental processes. In order to explain these delusions, Wernicke* resorts to what he terms the hypothesis of sejunction—a fine word which denotes that there is trouble in the association camp. To my mind it conveys the notion that there is a break in the ordinary association of our ideas, and recalls the spirit of dear old John Locke. Yet sejunction may be a convenient term to use, and it will fit in with my limited vocabulary far better than the auto-psychic, somato-psychic and allo-psychic explanatory delusions will. But I would not in any sense belittle Wernicke's writings, for he seems to me to combine in a peculiarly striking way the faculty of harmonizing anatomical and pathological data with the teachings of physiology and experimental psychology.

Granted that we are on the verge of discovering the anatomical mechanism by which the simplest mental processes are effected, and granted that we may explain a few morbid symptoms, we are not yet sufficiently advanced to give a rational account of the various changes underlying any mental disease. But it is clearly our duty to persevere in our anatomical and experimental studies in order that we may some day reach a better solution of these many vexed problems. Such studies as those of Berkley in this city, of Van Gieson in New York, are to be welcomed, for they point to the many different causes which may affect the cellular structure of the cortex. It is more than probable that future anatomical studies upon the brains of persons who have been afflicted with mental trouble due to alcohol and other toxic agents will yield results very similar to those obtained by Berkley. Of course the experimental physiologist has the great advantage of being able to direct the morbid process which he has instituted and to examine into the resulting changes at every stage. The pathologist must often be satisfied to see the terminal conditions only.

Within the past few years much has been written upon toxic and auto-toxic insanities. That intoxication plays an important rôle no one can doubt who has observed the relation existing between epilepsy and gastro-intestinal disturbance or witnessed

* Loc. cit., page 112, et seq.

the effects upon the mind of alcoholic poisoning; and the value of auto-intoxication is brought home to any one who has studied the mental peculiarities occurring in patients suffering from myxoedema and who has observed the improvement in all the mental symptoms following upon the administration of thyroid gland. But there is no warrant as yet for the supposition advanced by one able observer—that the factor of heredity in mental disease may largely be due to auto-intoxication during foetal life. I have considered it my duty in various parts of this address to point out the harm done by unwarrantable hypothesis. It is much more difficult to destroy theories after they have once gained a public hearing than to construct them, and instead of advancing our knowledge, they prove to be a distinct obstacle in the path of rational progress.

Those of you who have followed my remarks may have concluded that if my arguments are to hold good the institutions for the care of the insane should be turned over to the charge of the brain anatomist and the experimental physiologist; but I should regret to leave such an impression, for much as I appreciate the help that is to come to the study of psychiatry from the anatomical, physiological and psychological laboratories, I confidently believe that clinical observation will yield as important results as any one of them. But mental diseases should be studied not only with reference to the needs of society and with reference to the problems of heredity, but the relations of insanity to the entire organism, its relation to other acute and chronic nervous diseases, and, above all, the influence of various poisons, organic and inorganic, upon the cerebral structure, should be most carefully considered. If psychiatry has lain dormant for many years, there is surely no other branch of medical science that at the present time presents as many interesting problems to be solved by him who has eyes to see. The past of psychiatry has been full of discouragement; the present is involved in a maze of uncertainty, but the future is full of hope.

GENERAL QUESTIONS OF AUTO-INFECTION.

By C. K. CLARKE, M. D.,

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Physiological chemistry and bacteriology have been making rapid strides of late years, and laboratory research has opened up new fields for clinical investigation. That auto-infection and intoxication play important parts in the development of certain forms of nervous disease, has long been suspected, but it is only now that we are beginning to realize the true importance of the subject, and while it is true that there is a tendency on the part of some investigators to put almost every nervous disease in the autotoxic category, time will enable us to strike the proper balance and clearly distinguish between cause and effect. How far we are justified in classifying many nervous diseases as of autotoxic origin, yet remains to be seen, and for a time speculation must be rife, at least until the physiological chemist and the clinical investigator can so thoroughly compare notes, that proper conclusions can be drawn. Up to the present time the theorist has had the field pretty well to himself; it is now time for the clinician to assert himself and prove how far the theorist is right, for after all it is the practical side that most concerns us.

Of recent literature, the contribution of Dr. Ira Van Gieson on the Toxic Basis of Neural Disease, published in the New York State Hospitals Bulletin in October, 1896, is of the deepest interest to alienists, as it approaches the subject in a moderate spirit, and the author is not blind to the fact that we must not jump at conclusions too hastily. Dr. Van Gieson has covered the theoretical ground so thoroughly and fully, and with such fairness, that we cannot help feeling deeply indebted to him for making clear many problems necessarily of great complexity to the student of disease. Those of us who have been for years dealing with the insane, cannot fail to have been impressed time

and again with the fact that certain forms of insanity are clearly autotoxic. Take, for example, some of the remarkable cases of insanity occurring in connection with nephritis, where the condition at once suggests the delirium of intoxication. In cases such as these it is a simple matter to arrive at the conclusion that nerve cells are suffering from a pathological process not limited to the neural tissues alone; in other words, we will freely admit that toxins are the origin of cell degeneration. In all of the cases of insanity following suppression or disturbance of the functions of an organ, due either to disease or removal, where the condition is well known and easily understood, we have no difficulty in accepting autotoxis as a probable cause, and the successful treatment of myxoedemic insanity by the administration of thyroid, is the proof likely to be accepted by the clinician.

It appears to me that there is often a tendency to confound cause with effect in speaking of the influence of toxins in disease, and in some instances at least, to magnify the part played by autotoxis. Some lose sight of the fact that autotoxis is merely a secondary condition, and the primary defect is overlooked in the anxiety to counteract the influence of toxins. The therapeutic measures adopted simply temporize, and do not aim at curing the original lesion. This is a danger not to be forgotten, and while it may be admitted that some varieties of insanity are purely of autotoxic origin, it is more than probable that in the majority of cases, even granting the presence of toxins, it will be found that they are only one of the factors to be considered. So far is this theory of the origin of cell degeneration carried out that, in order to free it from danger of assault, even the influence of heredity has been denied. As a matter of fact, this is not necessary; there is nothing in the theory to conflict with the well-established facts in connection with hereditary tendency to some forms of disease. Now, while it is true that there is a debatable ground where many a hard battle may be fought, in regard to the origin of some forms of insanity, others are clearly autotoxic.

Long ago I was impressed by this fact, and having ventured this opinion in 1893 in regard to a class of cases called "anomalous," anticipated methods of treatment since adopted with success, although without the ability or knowledge to give an explanation as to why an acute disease should prove curative in forms of insanity ordinarily regarded as incurable.

We had passed through several outbreaks of typhoid fever, and after the development of the disease, many cases of mental recovery had taken place when least expected; in other instances marked temporary improvement with sudden relapse had occurred. In the majority of instances the stuporous condition of the patients, benefited by typhoid, and the general evidence of impaired function in different organs, suggested autotoxis. That recovery after the development of typhoid should occur, seemed surprising, although there was evidence that a changed metabolism had much to do with the matter. Afterwards the successful treatment of these cases by thyroid, was the natural outcome of the experience gone through. Many of these patients were undoubtedly suffering from auto-intoxications from the gastrointestinal tract; in fact, it is in this group we must look for many cases of insanity. How could a changed metabolism produce such beneficial effect? We long ago learned that in many cases of insanity, a changed metabolism is the one thing required to induce a cure. The stimulus of an accident, a blow on the head, the effort to elope, or some trivial occurrence may be the starting point, and if autotoxis is the condition present, the very lucid explanation of parenchymatous degeneration and repair of neural tissue given by Van Gieson, makes the reason for the gradual improvement apparent.

Taking it for granted that these cases were of autotoxic type—and there is evidence beyond mere guesswork to show that they were, evidence such as excessive amounts of indican in the urine—there was a lesson to be drawn in the way of suggesting a more rational therapeutics than that of mere intestinal antisepsis, useful as that is. We should, I think, endeavor to take broader ground than that of mere local treatment, and endeavor to establish what Van Gieson styles cytothesis, by means which prevent the production of the toxins, rather than to rest satisfied with neutralizing them when in existence. It may be urged that when toxins are neutralized, nerve cells will undergo the cytothetic change, but if the original conditions exist there is reason to believe that the repair may prove but temporary. I have seen this happen, and the danger exists when improvement dependent on a changed metabolism occurs, where cytolysis has nearly approached cytoclasis. Where thyroid has been administered this has proved to be the case, and where cell degenera-

tion has passed a certain stage the improvement effected has been temporary and cytothesis impossible. McLane Hamilton, basing his opinion on the works of Bouchard, Rodriguez, Chardon, Lavaure, Macpherson, Eccles, St. John Bullen, and Turner, believes that many of the acute insanities are due to primal intestinal disorders, and that the course of the chronic psychoses must be more or less modified by the same agencies, and he has carried on some interesting experiments to prove his theories, but the cases are too few to enable us to formulate any definite hypothesis. Still, the results obtained are of decided interest and suggestive of lines of investigation to be followed.

We should be careful, I think, in studying this subject of autotoxis to avoid rushing to extremes, and without free inquiry should be slow to classify nearly all nervous diseases as of autotoxic origin. More benefit will result by a careful and systematic study of those which can, without doubt, be assigned to the autotoxic class, and it is in this particular that the practical clinician can be of the greatest use to the physiologist. The complexity of the subject is great, and I think we cannot be too careful in avoiding the acceptance of any theory likely to narrow us in our observations.

In experimental cachexia strumipriva we have a condition universally admitted as autotoxic. It is interesting to read what well-known authorities say in regard to this:

Wesley Mills, in writing of several cases of experimental cachexia strumipriva, says: "The tendency now seems to be to abandon the earlier theory, that the cachexia was produced by failure to abstract some injurious product from the blood, when the gland is diseased or has been removed by operation. Attention is now rather called to the probability that those products, which the gland supplies, are essential to its complete constitution, and without which defect in the metabolism must result.

"It is being slowly realized that the corpuscles do not constitute the blood, and that the blood is not, as by far the larger proportion of students are apt to think, a mass of cells floating in a fluid which exists principally to convey these corpuscles hither and thither, but rather that the blood is a fluid of infinite complexity, and of whose composition, except as regards a few of the coarser details, we know but little, except in the vaguest way."

Again he says: "I am unable to comprehend how we can un-

derstand the effects of removal of an organ, by simply bearing in mind the part it plays of itself, so to speak, without also remembering what influence it may have as a part of a complex whole.

“In a complicated mechanism some wheel may of itself have little use, but by its removal the general balance is destroyed; so in the animal body, by the removal of one part, countless of the other parts are thrown out of adjustment. Hence, to say that the thyroid gland when extinguished fails to remove from, or to impart to the blood certain compounds may be true, doubtless is true, though we may be, and probably are, inadequately informed as to what is taken from and added to the blood; but it is only a small part of the truth, for how can we possibly estimate how far-reaching such disturbance may be, apart altogether from the direct effect of the gland itself in the way usually indicated.”

Van Gieson says: “Nevertheless, while at present no definite and precise statement of the relation of the whole class of auto-toxic poisons to the production of neural disease, can be given, there are few examples of auto-intoxication in which there is an unequivocal demonstration of the involvement of the nervous system by an auto-poison. In experimental thyropravia in dogs, the universal acute degeneration of the destructive type, which involves the whole cortex of the brain, corresponds very well with the fatal manifestations of irritation and destruction of portions of the nervous system.

“These changes in the ganglion cell have no other explanation than in the action of an auto-poison circulating within the body, which comes in contact with the ganglion cell. In certain cases of uraemia, I have been able to demonstrate acute degeneration of the cortical cells, but of a much less extensive and severe type than in thyropravia,”

It is evident, then, that we cannot be too careful in assuming that the whole case has been proved in every variety of mental disease, and we must avoid getting narrowed in our research. Possibly one of the most satisfactory methods of investigation for the practical student, who has to deal with actual cases of insanity rather than with theoretical cases, is by analogy, and if he makes haste slowly, in the end he will not have lost any-

thing. To my mind it is quite evident that certain classes of mental trouble are clearly autotoxic in their origin, that is, if we reason by analogy.

To the alienist there is ordinarily little difficulty in distinguishing between the delirium present in one suffering from alcoholic poisoning, and the excitement and incoherence of the generality of cases of mania, and yet there are cases where mania partakes more of the character of delirium than anything else; where the hallucinations at night are remarkable, and where the conditions of muscular excitement are so analogous to those seen in alcoholism, that the suspicion of toxaemia is at once created. I have seen this after operations where the ovaries were removed, in nephritis, in exophthalmic goitre, and, of course, in the cases of acute delirious insanity, the condition of the urine, when examined, confirming the belief. In many instances, too, there were remarkable periods of comparative freedom from excitement, followed by attacks of the wildest delirium.

In one case of acute melancholia of the extreme resistive type, and in these there is a strong possibility of toxaemia, almost complete mental balance could be restored for a day or more by the administration of moderate doses of calomel.

In another class of cases, probably autotoxic, a class benefited by anything which will change the metabolism, there is a marked element of stupor analogous to that produced by some well-known poisons. In these all of the bodily functions are plainly deranged, and if great care is not taken, cytoclasis will eventually occur, although in nearly every instance there is an effort made to establish cytothesis, an effort that can undoubtedly be aided by the clearer light we are getting on autotoxis.

Some of these patients have melancholia with stupor, others subacute mania with the stuporous element prominent, but invariably a certain amount of stupor is present, and this condition in a case of insanity of recent origin is plainly suggestive of toxaemia.

As might be expected, epilepsy is classed as one of the toxic diseases, not without a good deal of reason if the analogy argument is to hold good, for the convulsive seizures in uraemia are undoubtedly the outcome of toxaemia. However, the epileptic question will be fully referred to, I believe, by another member of this Association, and as it is the most difficult of all to un-

derstand and explain, I leave it willingly. In a general way the fact that definite poisons, not of autotoxic origin, can produce insanity, should make it easy to understand the autotoxic basis of insanity, and the researches of Bouchard have made very clear how many toxic substances are produced, particularly in the gastro-intestinal tract, when the function of some of the organs is disturbed. However, we must never lose sight of the fact that if the function of the organ were not impaired, the poison would not exist, and it strikes me this is the very point the theorist is extremely apt to overlook. When the auto-intoxication is due to a kidney lesion we are not slow to recognize the fact, and at once direct our attention to the care of that organ, and if autotoxis does play as large a part in the production of mental disease as many assert, we must certainly look beyond the mere fact of the existence of toxines; we must direct our investigations to the origin of toxines as well as to neutralizing their effect when present.

We must remember that even the brain cells themselves may be the origin of toxines, and we must not forget in our haste to adopt an attractive and seductive theory of the origin of disease, that toxæmia, as at present understood, will not account for everything we call insanity, although it will account for much.

Such investigators as Van Gieson will do much to unravel the tangle, but we have a part to play also, and by intelligent clinical investigation must strive to make clear the exact part autotoxis plays in each case of insanity.

Some authors seem to think that in auto-intoxication, we will find a rational explanation of the remittent character of some of the well-defined psychoses, and place them in the gastro-intestinal group, and certainly the theory is a fascinating one in the alternating insanities, although in folie circulaire the process of reasoning is more difficult to understand. In general paresis if the syphilitic origin of the majority of cases be admitted, the question may become simple when the pathogenic toxic substances, including autotoxic substances, bacteriological poisons, extrinsic poisons, and protozoal poisons are more fully understood, but we must be patient until the physiological chemist has made much more complete investigation than has yet been done, and must even reason by analogy in numbers of instances, a

process of reasoning unsatisfactory in a sense, but not by any means to be despised in practical medicine.

We may take it for granted that the autotoxic basis of nervous disease is proved in many instances; that it is at least an important factor in other forms of insanity, and although we are not in a position to positively affirm the part it plays, it certainly will explain the existence of forms of insanity difficult to understand in the past.

What are the practical questions we must face if the foregoing be true?

We must help the physiological chemist and the pathologist to unravel the complicated problems as rapidly as possible, by practical investigation of the toxicity of the blood and excreta of insane persons, so that we may place our therapeutics on a rational basis. In the alternating, subacute, and circular psychoses, there is a particularly promising field for research, but, above all, we must study the whole question from the broadest standpoint possible, and endeavor by intelligent investigation to assist in the development of what promises to be one of the greatest additions of the century to our knowledge of the cause of certain forms of insanity.

CLINICAL ASPECTS OF AUTO-INTOXICATION.

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The demonstration of the existence of auto-infection as a causative factor in mental disease does not lie within the province of this section of the series of the papers on the subject, but involves rather a brief consideration of the clinical aspects of such cases as have by recent and remote observers been considered as examples of such infection, together with a review of the methods best adapted to combating the conditions.

It is not hoped that methods entirely new or universally successful can be demonstrated, but rather by a collection of the means most successful in different hands, such a working system can be outlined as may suggest at some points and in certain directions, methods of relief in this class of patients.

The most enthusiastic can hardly claim the universal activity of this cause predominantly in all cases, though at some period in each life history of an attack, it may have been prominent in causing relapses or an exacerbation of disturbance.

It is not in old chronic patients with fixed delusions and with an apparently healthy digestive apparatus that acute intestinal intoxication is to be expected, but rather in acute cases with changing delusions, muttering incoherence, restlessness, constipation, elevated temperature, offensive breath, and dry, hot, or clammy skin. It is conceded by many and an increasing number of students, that intestinal putrefaction is evidenced by the presence of indican in the feces or by the conjugate sulphates and indican in the urine. In suspected cases the examination of the dejecta should be made in the laboratory as corroborative proof, though their absence would hardly justify the observer in withholding the measures necessary for relieving the condition referred to. And this condition, it is well to remember, may come on at any time in an attack of insanity, in patients apparently in fair health and enjoying fairly accurate functioning, on the

part of the stomach and intestines, liver and kidneys. That the rapid development of systemic poisoning by failure of elimination by one organ, the kidneys, can come on like a thunder-clap in a clear sky, has been demonstrated most painfully within the past week in the case of a matron of the Nurses' Home of one of our State hospitals, who, in apparent good health, was seized with convulsions with rapidly oncoming coma at breakfast time, and at 10 p. m. the same day was dead, with fifty per cent. of albumin in the urine and a great quantity of casts. And this without sufficient ill-health previously to interfere with duties or to attract sufficient attention to lead her to consult a physician.

The examination of the feces for indol can be made by Simon's method, to whose excellent treatise I am indebted very largely for the following paragraphs on the chemical examination of the dejecta.

Tyrosin produced during the process of albuminous putrefaction, and also during tryptic digestion, must be regarded as the mother substance of phenol, cresol, indol and skatol. As tyrosin, however, is very readily decomposed, it is usually not found in the feces, but the products of its decomposition instead, viz., the phenols, indol and skatol. In the urine these bodies, after having undergone oxidation, unite with sulphuric acid, or if this be not present in sufficient amount, with glycuronic acid and are excreted as phenol, indoxyl and skatoxyl sulphates or glycuronates in the urine. In the feces, on the other hand, phenol, cresol, indol and skatol are found as such.

The feces are diluted with water acidified with phosphoric acid and distilled. The volatile fatty acids present, together with phenol, indol and skatol pass over. The distillate is then neutralized with sodium carbonate and again distilled. During this process the three substances pass over, leaving the fatty acids behind as sodium salts. This mixture of the three, when treated with KOH and distilled, allows indol and skatol alone to pass over, and they can be separated by their different degree of solubility in water. Indol forms small plates melting at 52 degrees C., easily soluble in hot water, alcohol and ether. Skatol crystallizes also in plates melting at 95 degrees C., and is less soluble.

Indol thus obtained when treated with nitric acid and a little sodium nitrate shows a crystalline red precipitate of the nitrate

of nitroso-indol. Or a small piece of pine wood, if moistened with an alcoholic solution of the indol, when acidified with muriatic acid, will be colored a cherry red.

To determine indican in the urine, a specimen is taken from the collection for twenty-four hours. A few cubic centimeters are mixed with an equal amount of concentrated hydrochloric acid and two or three drops of a strong solution of sodium or calcium hypochloride or common saltpetre and $\frac{1}{2}$ cc. of chloroform are added. The mixture is thoroughly agitated and set aside. The indigo set free in this manner is taken up by the chloroform, producing a blue color, the degree of increase as compared with the normal being determined by the intensity of color. Bile pigment or potassium iodide must be eliminated from the urine or neutralized before the test is made.

The sulphates in the urine also form a basis for conclusion, and a brief reference to the valuable work of Simon in this connection is useful.

While the greater portion of the sulphuric acid excreted in the urine is found in this form of mineral sulphates, about one-tenth of the total amount may be shown to be in combination with aromatic substances of the oxygen group, the most important of these being the salts of phenol, indoxyl and skatoxyl. Indoxyl and skatoxyl are derived from indol and skatol, which, with phenol, are found during the process of intestinal putrefaction, their amount increasing and decreasing with the amount of putrefaction and serving as a direct index of its intensity.

The mineral sulphates have been termed preformed sulphates in contradistinction to the other, which are known as conjugate or ethereal sulphates.

The amount of sulphates eliminated during the twenty-four hours by a normal person varies between two and three grains, the ratio of preformed to conjugate sulphates being 10:1.

The conjugate sulphates are increased in all cases of intestinal putrefaction. Simon's observations have led to the following conclusions:

1. A diminution in the secretion of hydrochloric acid (gastric) is accompanied by an increased degree of intestinal putrefaction.

2. An increase in the secretion of HCl is accompanied by a decrease in the degree of intestinal putrefaction.

3. The degree of intestinal putrefaction may be measured directly by the elimination of the conjugate sulphates.

Thus an increase in the conjugate sulphates points in a general way to an increased intestinal putrefaction due to a total anachlorhydria or at least a hypochlorhydria of the gastric juice associated with bacterial fermentation, if lactic or butyric acid are not present in large amounts; biliary and intestinal obstruction may produce the same result, but these usually have other symptoms which may demonstrate their presence.

To test for the preformed sulphates, a few cubic centimeters of urine strongly acidified with acetic acid are treated with a few drops of a solution of BaCl_2 , when in their presence a cloudy or white precipitate referable to the formation of BaSO_4 will form.

To test for the conjugate sulphates, 25cc. of brine are treated with the same volume of an alkaline barium chloride mixture (2 vol. of sol. barium hydrate and one of BaCl_2 saturated at ordinary temperatures) and filtered after a few minutes, the preformed sulphates as well as the phosphates being thus removed. The filtrate is strongly acidified with HCl and boiled. The occurrence of a precipitate will be referable to conjugate sulphates.

The clinical picture of cases evidently suffering from intestinal toxæmia readily presents itself to all hospital men whose service includes the reception of many acute cases. One of the types of these may be considered the puerperal state, and the following paragraph from Dr. McLane Hamilton in regard to alcoholic insanity applies equally well to many other acute insanities:

"If we stop a moment to consider the clinical features of acute alcoholic insanity we shall find many of the symptoms of a rapidly developing toxæmia, quite apart from that effect upon the nervous system which may be produced by the agent itself.

"Cerebral hyperæsthesia, rapid changes in perverted perception, the development of the peculiar hallucinations in which rotten substances, worms, bad odors or other horrors appear, often figure; the hyperkinesia, cephalalgia, malaise, etc., and the antecedent history of gastro-intestinal disorders, the presence of abundant aromatic sulphates, urea and indican in the urine, and possibly skatol, the foul, small stools or diarrhœa, the final unstable and changing delusions, exhaustion and death are suggestive. When we consider that the proteids have passed undi-

gested through the small intestines and have accumulated below, where they lie enfolded in a congested and feeble gut, it is not difficult to appreciate the fact that they form a rich field for bacterial attack with the resultant introduction into the system of an amount of toxic material sufficient to produce a most serious change in the functions of the brain and cord.

"The alcoholic extracts of fecal matter, according to Bouchard, are far more toxic than ordinary putrid matter, so it will be appreciated how readily skatol, indol and other alkaloids of the feces may be introduced in such quantities as to do much mischief. The successful treatment of the cases of alcoholic insanity that have come under my notice certainly goes far to strengthen this view."

The practical treatment of these cases includes, first of course, ridding the lower bowel of putrefying matters, and for this purpose high enemata are the most useful. The experiments of Bowman, which show that when a fistula was made above the colon, indol and skatol and the other conjugate sulphates disappear, to recur again when the intestinal contents were allowed to pass through the lower bowel, proved that the putrefactive process goes on mostly in the lower bowel.

The fact that these changes go on most actively when there is a lack of or a greatly diminished amount of hydrochloric acid secreted by the stomach, presents an important therapeutic suggestion; and hydrochloric acid should be administered in such cases.

First and foremost, the intestinal contents, which have become a source of infection, must be cleared out. Washing out the lower bowel with a saline solution is usually necessary. To reach the contents of the small intestines, however, cathartics and laxatives are essential, and a subsequent flushing by laxative mineral waters is of great utility.

To empty the smaller intestines, castor oil and the salines, many of the laxative mineral waters, and small doses of calomel are all useful.

Much has been said and written on the subject of intestinal antiseptics, and while experimentally many appear to be useful, their use must be secondary to the evacuation of the offending intestinal contents. When we consider the relative disproportion between the intestinal contents and the amount of drug

which can be given, unless in very abundant solution, it is a little difficult to see how effect can be produced by actual contact. At the same time as adjuvants to washing out the bowels, flushings with mineral waters and appropriate diet, they are useful, and a brief review of some of the drugs which have been considered antiseptic may be of advantage.

It has been objected that in order to give thorough antiseptics, it is necessary to give drugs in such quantity and of such character as to produce serious injury, if not actual local lesions in the stomach or intestines, or else grave systemic poisoning or both. Practically, however, it seems possible to administer doses sufficient to retard bacterial development, falling short of absolute destruction of micro-organisms, and thus to assist in producing a return of healthy intestinal function.

Of the antiseptics a great many have been tried, and in the administration there are certain considerations which must be taken into account, before we should in any unfavorable case infer that the theory is faulty. For instance, certain germs are found principally in the large intestine and in children's diarrhoeal diseases, the point of greatest bacterial development being in the ileum and in the large intestine. Consequently, freely soluble drugs are not likely to affect more than the stomach and upper part of the small intestines, and the least soluble the colon.

Disappointment as to the effect of antiseptics may be due in many instances to the fact that in reality the seat of the trouble has not been reached. On the other hand, the least soluble antiseptics, like naphthalin and bismuth, have an excellent effect on cases in which the decomposition appears low down. Bismuth, a time-honored remedy in the treatment of intestinal troubles, has had its good results attributed to its astringent properties, but it seems now as if it were its antiseptic qualities which have all along been efficient. And this leads to the observation, and it is a striking fact, that those drugs which for years before the days of antiseptics held the strongest place as controllers of diarrhoea, are now proved to be drugs which are antiseptic, such as bismuth, calomel, the mineral acids, the chlorides and sulphates of iron and the nitrate of silver, given, it is again to be noted, not for their antiseptic properties, for those were unknown, but for their astringent action. Creosote was one of the earliest, if not the earliest, drug given in diarrhoeal diseases, and was

used in 1846 by Mayes, and, following him, many other experimenters have recorded the favorable results they have obtained, but after some years' use it appears to have been neglected.

Oil of naphtha was also used early, and many favorable results were chronicled. Salicin also received considerable attention, and early in the seventies a number of articles in its favor appeared, especially in Southern medical journals. It is possible that in some of the southern localities it was found especially useful in cases in which a malarial element existed. Later, salicylic acid and salicylate of calcium and of bismuth were used by some physicians, among whom was Hutchinson of Brooklyn, who reported twenty-seven cases of serous diarrhoea in young children in whom immediate improvement in all the symptoms followed exhibition of this drug combined with ether.

Baginsky's article on antiseptics in intestinal diseases a few years ago directed much attention to the subject and was the first to arouse a permanent interest in this mode of treatment, former articles and experiments having been somewhat sporadic in their appearance and local in the interest excited.

It is likely also that of late years progress in bacteriology has served to direct attention more closely to intestinal antiseptics, demonstrating the rationality of treatment which heretofore in the imperfect state of our knowledge of the relation of micro-organisms to disease had been largely empirical. Resorcin and naphthalin were advocated by Baginsky, while others soon brought forward benzoate of sodium, bisulphide of carbon and chloride of potassium.

Dr. L. Emmett Holt some years ago made a series of elaborate investigations of the diarrhoeal diseases of children, of supposed bacterial origin, the results of which he gave to the New York Academy of Medicine. Suffice it to say that the percentage of recoveries under the use of diet and supposed intestinal antiseptics was very much larger than under the old method of opium and astringents. It is but fair to say, however, that this author, while admitting the usefulness in many cases of intestinal antiseptics, in his last work on diseases of children lays more stress in this form of trouble on the use of cathartics, washing out the lower bowel, and diet, than on drugs.

Of all of these, one of the most practical, however, and one which has been found exceedingly useful by Dr. Hamilton, as

stated in his recent articles on the subject, is salicylate of sodium in ten to fifteen grain doses thrice daily.

The ingestion of considerable quantities of water, either alone or medicated, is in itself an excellent means of elimination, not only for the intestines, but for the kidneys and skin as well. We have introduced in our institution a charging apparatus by which mineral waters can be made, carbonated and rendered very palatable, this palatability allowing greater quantities to be taken. Carbonated waters, through the fact of their aeration, are also credited with being a direct stimulant to the gastro-intestinal membrane. The apparatus consists of a few simple elements easily managed by a pharmacist. As yet we have manufactured only a limited number of artificial waters. We use principally the plain carbonated water and Vichy water made up with Hanbury Smith's salts, containing bicarbonates of sodium, potassium, magnesium, strontia and calcium, and sulphate, phosphate, arseniate and chloride of sodium; also, in addition to the above, lithiated Vichy, containing carbonate of lithia. It is easy to secure packages of these salts, and the following waters, if desired, can be made: Kissingen, Chalybeate, Congress, Curt, Deep Rock, Eger, Excelsior, Geyser, High Rock, Lithiated Vichy, Pullna, Pymont, Saratoga Vichy, Selters, Spa, Star, Vichy, Bitter Kissengen and Marienbad. The average cost of these is about fifty to sixty cents per ten gallons.

Among these waters selection may be made for their laxative, alterative, cathartic, chalybeate, tonic and anti-rheumatic effects as desired. The plain carbonated water is apparently a stimulant to the intestinal tract, and is a convenient vehicle in which to give milk. In cases of acute mania, acute melancholia, presenting symptoms of intestinal toxæmia, we find the waters especially useful.

In all such patients diaphoresis is stimulated by warm baths and massage, and in some instances, especially in cases of thin, feeble patients, subsequent inunctions of cacao butter have proved nutritive. Finally, in addition to the elimination of offending intestinal contents and nullifying putrefactive changes by the exhibition of antiseptics, the use of mineral baths, mineral waters, etc., we should remember that the toxic substances absorbed are in themselves destructive of red globules. This after effect must be combated by the use of blood-forming agents

like certain combinations of iron, or, what is perhaps better than any, a glyceride of bone marrow.

While these measures are applicable only to a small proportion of the permanent inhabitants of our asylums and hospitals, they are applicable to a much larger proportion of *acute* admissions, and the range of applicability will, I am sure, be much widened in the experience of each observer who carefully studies his new cases with the subject of toxic conditions in view.

DISCUSSION.

DR. VAN GIESON.—The first speaker does well to caution us not to go too far in applying the autotoxic theory to all forms of mental and nervous disease. Apparently, in the evolution of our knowledge of any form of disease, there must come a period of speculation which frequently does not a little harm, and it is perhaps only fair to say that we are in such a period of speculation now in endeavoring to build up the autotoxic theory of nervous and mental diseases. After all, this theory is not entirely new, but is simply an extension of the old humoral theory of disease which, in its relation to the induction of mental disease, was expressed so well a hundred years ago by Benjamin Rush, who declared in substance that madness arose because the brain shared with other organs in the body the damage inflicted by gout, dropsy, rheumatism, eclampsia of pregnancy, the fevers and the like.

Excluding cases of insanity of psychic origin, we must conclude that a good share of mental disorders are to be ascribed to a toxic agency, particularly those belonging to the most subtle class of poisons, the autogenous category.

Any thorough comprehension of the toxic basis of mental and nervous disease beyond speculative hypothesis has been rendered possible only within very recent times.

The precise knowledge of the structure of the nervous system attained by the application of the Golgi methods, the clear insight into the action of bacterial poisons upon the tissues given by experimental pathology, and, above all, the progress of modern cytology and the application of its methods in pathological research, have at last removed the barriers to comprehensive investigation of mental and nervous diseases.

The first speaker has been cautious also to remind us of the

role of inheritance in the induction of neural disease. Yet I venture to believe that some of the burdens of inheritance on the body at large or on the nervous system receive a reasonable explanation in that they may be the transmitted effects of toxic agents damaging the neural and somatic cells in the ancestors. At any rate, if we think of "neuropathic dispositions" and inherited vulnerability of the nervous system as the latent effects of toxic agencies in the progenitors, it confers less of a vague character to the meaning of these things. The effect of alcoholism in subsequent generations is very likely a concrete example of the latent effects of transmitted toxic damage to the neural cells.

Much time has been wasted and much confusion has arisen in the investigation of neural disease by studying the nervous system as something apart from the rest of the body, and often enough it has been made to appear that the nervous system had a radically peculiar structure of its own, and a *sui generis* set of pathological changes different or distinct from lesions elsewhere in the body.

No observer in this attitude, or lacking opportunities to study the beginning of neural lesions, or the comprehensive scope of the general pathologist, can have any philosophical conception of the nature of nervous disease.

The whole body in all of its parts is composed of cells or their derivatives, and the brain forms no exception to the general fundamental plan of cellular integrations witnessed in all other parts of the body. The nervous system is built upon the same fundamental plan as other humbler and more simple tissues and organs of the body, and furthermore, it behaves just like these other tissues and organs in its reaction to pathogenic agencies. The nervous system has no distinct pathological processes of its own without analogy elsewhere in the body.

If we would comprehend the nature of the neural lesions which lie parallel to the manifestations of mental and nervous disease, we must study the simpler organs and tissues of the body and the pathological processes that occur in them; then the observer may appropriately seek to investigate the nervous system, for we shall surely find that the pathological processes in the brain in all of its complex and bewildering morbid manifes-

tations are in no wise fundamentally different than those elsewhere in the body.

It is well, too, to remember that while the clinical varieties of neural disease are many and its symptomatology protean, the pathological processes underlying these diseases or phases of disease are but few in number. All of the vast and varied manifestations of organic neural disease are due to degeneration, inflammation or necrosis with their combinations and various phases of development.

Perhaps the most fundamental point in gaining a clear conception of how the brain shares with other organs of the body the effects of toxic agents in the acute general diseases is to look upon it as being built like other organs and to co-relate it with these other organs. If we do this, we shall find that it is built in a general way very much like the kidney. Thus, like the kidney, the brain has a stroma and a parenchyma. The stroma corresponds to the neuroglia, and the parenchyma to the neurons. The stroma in the brain behaves like the stroma in the kidney when subject to disease, and the neural parenchyma also behaves like that of the kidney, liver or other viscera of the body when exposed to toxic agencies. Thus we have in the brain an exact analogue of the lesion which was formerly termed by the pathologist cloudy swelling of the kidney.

We know that acute parenchymatous degeneration of the kidney is quite regularly caused by the action of toxic substances of a most diversified character and I have found that the analogue of this lesion of the kidney occurs in the nervous system, especially the cerebellum and brain cortex very frequently indeed, and that its occurrence is due to the same reason as in the kidneys or other viscera, namely, to the action of poisons, whether they be of the extrinsic, bacterial or autogenous class.

Acute parenchymatous degeneration of the brain is of enormous importance in explaining many of the expressions of acute nervous and mental diseases, and equally important is the understanding of the chronic form of parenchymatous degeneration of the nervous system in explaining the subacute, persistent and chronic varieties of the neural diseases.

The capacity of recovery of the nervous system from acute parenchymatous degeneration is of the utmost importance to the clinician. This depends chiefly upon the duration factor in the

exhibition of the poison which causes the neural parenchymatous degeneration. If the poison act but a short time upon the neurons their recovery from the degenerative process is possible. If the poison be persistent, however, the cells are liable to become permanently damaged.

Time permits of only the briefest reference to parenchymatous degeneration of the nervous system, but its very great importance, particularly the acute variety, deserves much emphasis in the clear understanding of the involvement of the brain in the acute general toxic diseases. Acute parenchymatous degeneration of the nervous system, whether of little or great intensity, is very liable to occur in all of the acute general toxic diseases, such as typhoid fever, pneumonia, influenza, uremia, sunstroke, and the like. The delirium accompanying these acute toxic diseases is due to acute parenchymatous degeneration of the cortex.

The first speaker, Dr. Clarke, has done me the honor of adopting some terms that I have thought were practical and useful. I should like to show on the blackboard what they mean. (Illustrating on the board.)

Let us take a nerve cell of the motor type which is fairly well understood. We find it crowded with distinct granules which have an important signification because they are the working units of the cell. They are the storehouses of energy of the cell, and if poisons come into contact with such a ganglion cell we find first a dissolution of the edges of the granules, and that finally the granules disappear or break up into fine dust. Attending the action of such poisons on the cell, we have an expression of the liberation of its energy, manifested often by delirium, yet up to this point in the toxic degenerative process the ganglion cell is capable of recovery. We know this because if the poison is taken away and the patient is properly treated the lost function returns. We may, therefore, use the term *cytolysis* to indicate cell resolution up to, but not beyond the point of beginning destruction, and express the opposite process of recovery of the cell from its partial degeneration by the term *cytothesis*. Finally, if these poisons persist, the process of dissolution of the working units of the ganglion cells passes over into destructive processes in the cell. There is loss of the cellular substance, changes in the vital centre of the cell—the nucleus—and the

ganglion cell is doomed. For this condition the term *cytoclasis* or cell destruction is to be used.

The second speaker, Dr. Hill, has shown us that notwithstanding the subtle agency of poisons in the production of mental diseases, the time seems to be approaching when they will not be entirely beyond medical interference. A most interesting point brought out in the second paper is the percentage of cases in which he found dilatation of the stomach. This lesion has been found to be most distinctly associated with tetany and tends to show to some extent that there is a relation between the two diseases (epilepsy and tetany) not only clinically, but etiologically.

The third speaker, Dr. A. W. Hurd, has penetrated a realm that few have dared to approach, and has done it in such a way as to show that the ground can be approached from a practical standpoint and that we may hope to analyze the autogenous poisons arising from or associated with the gastro-intestinal tract.

DEMONSTRATION OF VARIOUS TYPES OF CHANGES IN THE GIANT CELLS OF THE PARACEN- TRAL LOBULE.

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I would like to give a demonstration of cell changes due to auto-intoxication and to some other causes. I do not think I shall be able to add anything to the intoxication theories or to the aspects of mental disease as they have been offered to-day by Dr. Clark, Dr. Hill and Dr. Hurd. I think, though, the remarks of Dr. Van Gieson deserve reiteration, that we must learn to see in the brain an organ analogous in structure and also in its physiological functions to other parts of the body. If we then consider how little is known in regard to the toxins that produce changes in other parts of the body, let me say in the skin, I think we shall feel that we are not alone in our relative ignorance of the actual details of the process of auto-intoxication and diseases of metabolism. If we wish to consult with our friends in general medicine they will meet with the same difficulties we encounter and on the whole will not be able to show that they have made marked progress beyond what has been attempted in our special field. The result of such a comparison, therefore, is not to me depressing. I think that in medicine in general the auto-intoxication theory is a problem brought most into evidence by our specialty, and surely we have most reason to regret that physiological chemistry and experimental pathology do not help us more to get out of the period of mere speculation. The changes of nerve cells that I wish to demonstrate are all shown in one type of nerve cell, the large pyramidal cells in the fore-brain. I choose that cell because it is the largest and because it is best to study the changes in various forms of disease on the same type of cell and on the cell that is most likely to show obvious changes.

The first case is a marked type of degeneration on the ground of arteriosclerosis, so-called simple pigmentary degeneration,

such as is found in senile dementia. The second type is furnished by a case of senile melancholia, partly allied to the forms of pigmentary degeneration, and partly to the lesion after interruption of the nerve process or axone, the reduction in size of the granules, showing moreover the formation of peculiar whirlpools. The third one, the consequences of a haematoma (so-called hemorrhagic pachymeningitis) probably pure mechanical pressure; finally, two cases which must belong to the general group of intoxications, one of them observed in the general hospital and manifesting symptoms that led to a diagnosis of meningitis, coming on during florid secondary syphilis; the other case of subacute course and a symptom-complex allied to that of hysterical insanity with choreic and convulsive manifestations, passing over into incoördinated restlessness with complete disorientation. I have not time to enter upon the cases in detail; they will be more fully described in a later publication. The chief thing I have in mind is to take the opportunity of showing you the actual specimens, since they represent important types, and since an inspection of the specimens always furnishes a far better idea than the reproduction of pictures.

I have chosen for demonstration, sections from the paracentral lobule in all of the cases. I show first a normal cell from this region in a rather thin paraffine section (fig. 1). You will see a large cell-body of pyramidal shape with a large apical process and smaller lateral dendrites. Near the middle of the cell-body you see a large nucleus with nucleolus. The protoplasm shows streaks and granules of a deeply stained substance; so-called Nissl bodies or tigroid substance of Lenhossek. Between them there are plain paths which are stained quite faintly, and which we know to contain the fibrils, probably the most important part of the nerve structure. In some of the cells, in the neighborhood of the nucleus, you would observe a nest of brownish pigment granules. The dendrites stain similarly to the protoplasm, as they have slender streaks of deeply stained matter, besides the non-stained (fibrillary) substance. The neurite or axone is not stained as it does not contain any Nissl bodies, but simply fibrils. Going over to the cells of a case of arteriosclerosis you see a number of the cells of normal appearance, others with an exaggerated amount of pigment; and finally, cells which resemble a bag of pigment, with just a small remnant of an apex

process into which a shrunken nucleus is pushed (fig. 2). Intermediate stages show that the first thing that occurs is a dissolution of granules making place to pigment. The degenerated cells are frequently in nests together, which would suggest local disorders of nutrition.

In the second case, the patient with senile melancholia, you notice changes somewhat similar to those found in the motor cells of the cord and medulla, from which the nerve process has been cut off in the periphery. A type of this lesion is seen in the cells of the facial nucleus in a case of facial paralysis due to infiltration of the periosteum of the internal auditory canal, to be described elsewhere. The lesion of the cells consists in a reduction of the size of the granules, or complete decay into dust-like particles, leaving in certain places (usually opposite the axone) areas of an almost homogeneous transparent character, general swelling of the cell body, and usually dislocation of the nucleus to the surface. In our case of melancholia, both paracentral lobules showed lesions of the large pyramidal cells. In all of them the granules were smaller than normal. In part of the protoplasm (fig. 3) there is in many cells a homogeneous dissolution of the structure as if the details had been washed out; the nucleus frequently seemed distorted and flattened, as if pressed to the wall by this swollen portion. Independent of this, or sometimes along the margin of the swollen area, there appears an accumulation of yellowish pigment. Other cells show practically no "glassy" swelling, but a peculiarity of having the very slender Nissl bodies arranged in striking whirlpools (fig. 4), such as I have not seen in any normal cells; in fact, in no nerve cell outside of this case, and which to my knowledge are not described anywhere. The nucleus forms in many cells the centre of these vortex formations, and frequently is covered up so by them that the Nissl stain does not give an outline of its capsule. An explanation of this condition is somewhat difficult. It might be intelligible under the supposition that the glassy degeneration of part of the cell body might produce certain distortions of the internal structure in the rest, as is actually seen in many of the cells, and that cells which show these vortex formations would be in a state of recuperation as it is most marked in the large ones. Another thing that must be thought of is, that owing to the smallness and slender form

of the granules their grouping is more readily observed than in the normal cells, which may occasionally show a slightly similar condition. Indications of this have been noticed by myself in another case of senile dementia. I would not like to be understood to put down this case as the type of what occurs in senile melancholia, since other experience in this line is not favorable to this view, and since a further examination of the basal ganglia will probably reveal lesions of the projection fibres within the internal capsules.*

In the next case, in which death occurred probably about eight days after the onset of an extensive subdural hemorrhage, the changes of the cells are somewhat different. We are most probably dealing with the effects of lasting pressure through the haematoma; perhaps, largely mechanical interference with the metabolism, since in a case of very acute increase of brain pressure, a slight indication of the same alteration was found. It consists (fig. 5) in the dissolution of the granules into a uniform dust. The cells look in no place as glassy as in the former; there is rather a hazy diffusion of the chromophilous material without any swelling of the cell body; the latter is rather deeply stained and the dendrites are faint, but easily followed for a long distance. In some cells the streaks within the dendrites are slightly preserved on the whole better than in the cell body. The nucleus has not undergone marked changes. Within the same brain there are many cells which show advanced pigmentary degeneration. The two lesions are not to be confused; the one is an acute mechanical disturbance of metabolism, and the other a chronic senile degeneration. It may be well to say that in this case, the cells of the cerebellum were not affected, as they were protected by the tentorium.

Finally, I wish to attract your attention to two cases resembling in their pathological changes those which have been described by Cramer in a case of acute insanity, and quite recently by Hoch in another case of acute insanity in a paper read before the Boston Medico-Psychological Society. One of my cases came to autopsy in the Worcester City Hospital, and I was allowed to get material at the autopsy through the kindness of

* This proved to be true to a limited extent only. A second case examined since, a patient with typical senile melancholia, gave evidence of identically the same changes as those described above. Both will be published in full as soon as the basal ganglia of the second case are examined.



Fig. 3

of the granules their grouping is more readily observed than in the normal cells, which may occasionally show a slightly similar condition. Indications of this have been noticed by myself in another case of senile dementia. I would not like to be under-

DESCRIPTION OF PLATES.

All the preparations were stained with Nissl's methylene blue, partly by myself, partly by Dr. Emma W. Mooers. The drawings were made by Miss Florence Byrnes with a Reichert or Lertz oil-immersion 1-12.

Fig. 1. Normal Betz cell. Thin paraffin section.

Fig. 2. Pigmentary degeneration in arteriosclerotic senile dementia.

Fig. 3. Betz cell from a case of senile melancholia. Dislocation of nucleus and "homogeneous" degeneration of centre of cell and of part of apex process.

Fig. 4. Betz cell from the same case, with peculiar vortex arrangement of the Nissl bodies, a condition present in many of the cells of the type given in Fig. 3.

Fig. 5. Cell with dissolution of most Nissl bodies, due to pressure by hæmatoma. No cloudy swelling.

Fig. 6. Three cells, a cluster from the paracentral lobule of a patient who died in a delirium during secondary syphilis. Dissolution and faintness of Nissl bodies. Glassy swelling of nucleus, with slight violet tinge, diffusely stained, especially in the smallest cell.

Fig. 7. Cloudy swelling with dislocation of the nucleus towards the apex; diffuse stain of the protoplasm and dendrites. Case of fatal "Hysteria gravis."

scribed by Cramer in a case of acute insanity, and quite recently by Hoch in another case of acute insanity in a paper read before the Boston Medico-Psychological Society. One of my cases came to autopsy in the Worcester City Hospital, and I was allowed to get material at the autopsy through the kindness of

* This proved to be true to a limited extent only. A second case examined since, a patient with typical senile melancholia, gave evidence of identically the same changes as those described above. Both will be published in full as soon as the basal ganglia of the second case are examined.

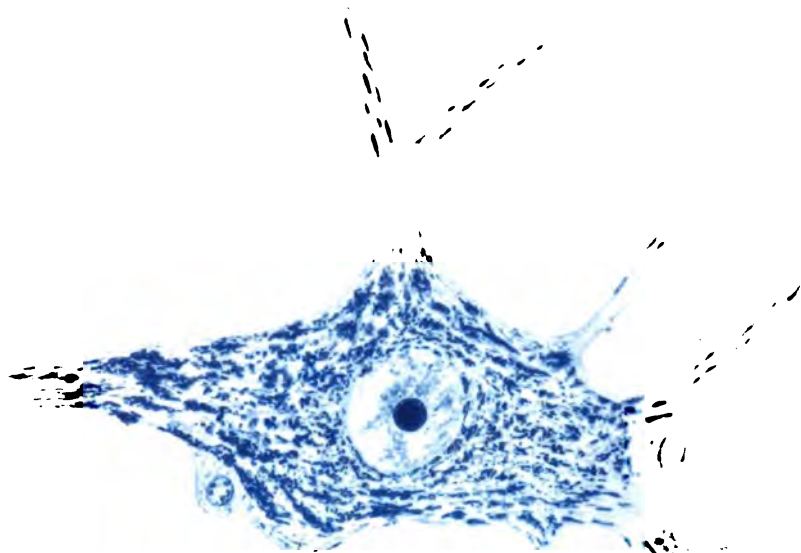


FIG. 1

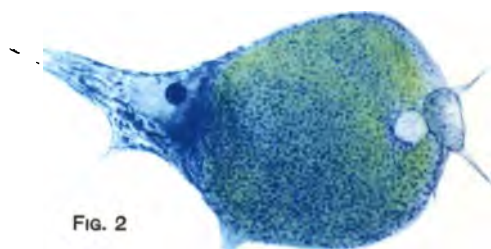


FIG. 2

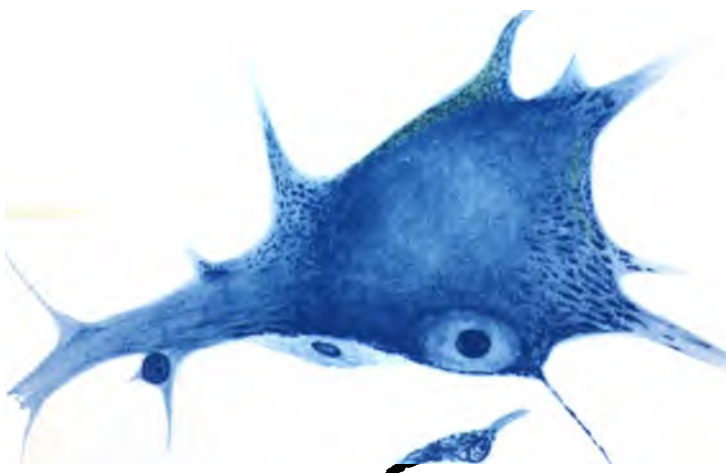


FIG. 3

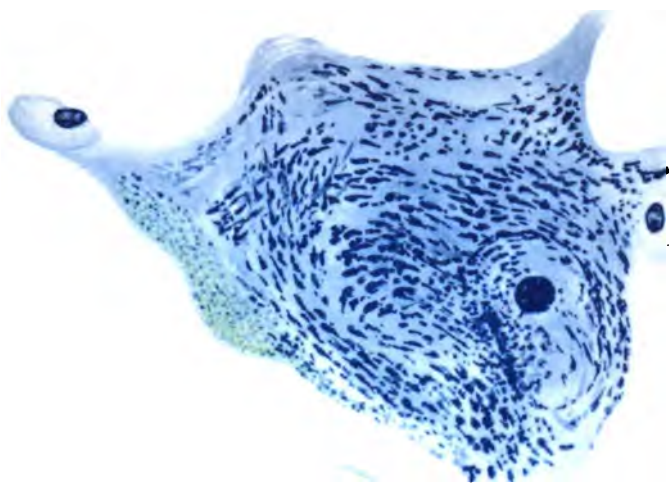


FIG. 4

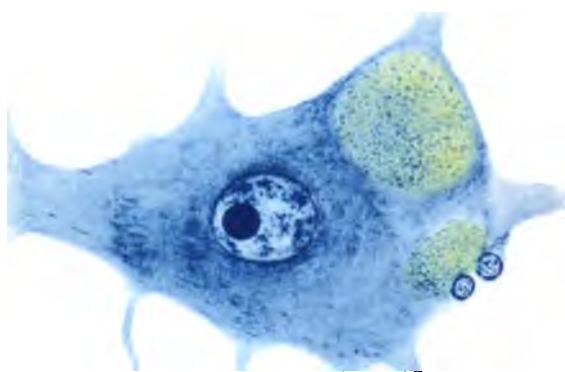


FIG. 5

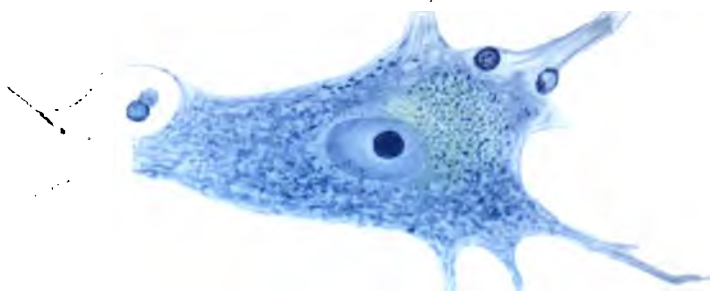


FIG. 6

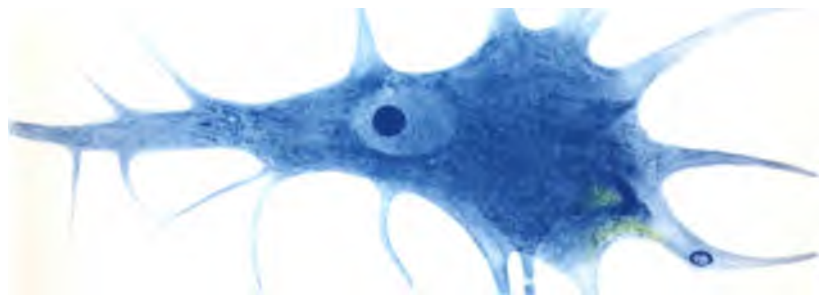
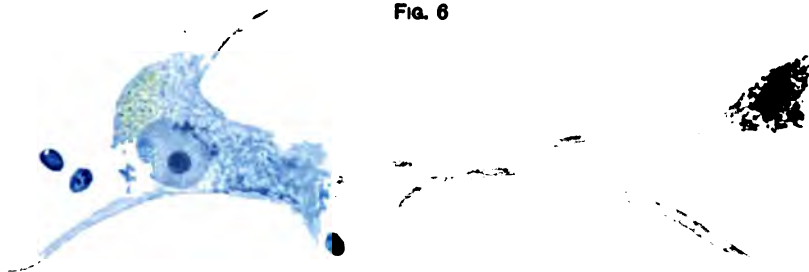


FIG. 7

Dr. F. H. Baker. The patient was admitted there with florid secondary syphilis of the mouth and had been in a delirium with convulsions for several days. The cells which we are studying show almost complete absence of the granules, somewhat similar to what we found in the case of haematoma, were it not for the lesion of the nucleus (fig. 6). In several of the nuclei, the nucleolus is somewhat enlarged, although not quite as much as in Dr. Hoch's case and the nucleus as a whole has a distinctly bluish hue. In the smaller cell it is especially noticeable. In the last case, which began February 1, 1897, with a severe cold, developed into choreiform twitching of the muscles, and finally into attacks of hysterical laughing and crying with one spastic seizure, and finally disorientation and obscuration with marked motor restlessness, we found also absence of the granulation in the cell bodies and in most of the dendrites, with hardly any glassy or pigmentary transformation and only slight swelling of the nucleoli. The cell as a whole is distinctly swollen (fig. 7) and the nucleus slightly dislocated towards the apex process. Only in a few cells the nucleus is pushed to the surface or is devoid of nucleolus. To judge from the general course of both the latter cases and from the lesion in the pyramidal cells, we are most probably dealing with two cases of intoxication, the further details of which will be published later on. The first case had no accompanying disease of the internal organs; the second a beginning of broncho-pneumonia with streptococcus infection. I mention on purpose very little about the changes of the nucleoli since the studies on that part are not quite closed and other methods besides Nissl's must be used. I hoped, however, to have been able to draw a short sketch of what we must consider to be the most frequent and typical alterations of the pyramidal cells of the cortex.

As to the possibility of there being artefacts among the types described, I should exclude it because all the autopsies were done within less than twelve hours after death and the material preserved and worked out with all the needed precautions. There is further, a check in the comparison with cells from other localities, which, as said above, were practically intact where the cause of the change was merely a local one.

THE DEVELOPMENT OF THE HIGHER BRAIN CENTRES.

By STEWART PATON, M. D.,
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The aim of this paper is to present in a general way some of the relations which the anatomical structure of the higher brain centres bear to the production of psychological phenomena. The existence of an intimate association between cerebral structure and the manifestation of the various degrees of mental activity was first pointed out by Anaxagoras. That philosopher said, "If man is more intelligent than animals, it is because his mind employs more developed organs." This idea is current in the writings of many of the classical authors, but is first discussed at some length in the writings of Descartes, * but is more clearly outlined and taught by Hume. The comparative method of investigating psychical phenomena is said by Lecky to have received a new impetus from the teachings of George Ernst Stahl. By some he has even been called the founder of this method. On the other hand, the purely theoretical character of some of Stahl's speculations must be kept in mind. Psychologists and anatomists are, however, certainly indebted to him for at least the suggestiveness of his teaching. He even attempted a fusion of psychology and physiology. These views were also ably supported by Cabanis at the end of the last century. But the doctrine that the genesis of psychological processes is intimately dependent upon the structure of the nervous centres has never been more clearly enunciated and expounded than by Herbert Spencer. His philosophical analysis of this law of correlation demands the earnest attention of all those who are interested either in the normal manifestation of psychical phenomena as studied by the psychologist, or in the morbid processes which claim the attention of the psychiatrist. A single sentence epitomizes this author's teaching, "It is a conspicuous

* Huxley says that Descartes was the first to use physiological methods in the investigation of psychological phenomena.

fact that mental action is contingent on the presence of a certain nervous apparatus, and that greatly obscured as it is by numerous and involved conditions a general relation may be traced between the size of this apparatus and the quantity of mental action as measured by its results."

Medicine has made no greater contribution to science than by emphasizing the importance of those facts which demonstrate the truth of Draper's statement, that there can be no psychology which is not founded on anatomy and physiology, and also that many of the problems of human psychology will become intelligible only by comparison with the facts deduced from the study of comparative psychology. The truth of this statement needs no demonstration. Structure and function are correlative terms; although in the history of psychology there have been periods when their close interdependence was doubted. The term physiological psychology may be regarded as an unfortunate survival, for it implies the attempt to explain psychological phenomena in ways which are neither in accord with physiological laws, nor directly related to them. There exists a very close relationship between the anatomical development of the higher brain centres and their physiological expression of function. It is proposed to consider this relationship in its two-fold aspect. First, from the standpoint of phylogeny, and secondly, but very briefly, in its ontogenetic importance.

The higher brain centres are developed from the telencephalon, or secondary fore-brain, which reaches its greatest development in the adult life of the higher mammalia. The telencephalon is an outgrowth from the prosencephalon, or primary fore-brain, and is made up of elements from which develop the corpora striata, rhinencephalon and the pallium. The last may be defined as the portions of the walls of the secondary cerebral vesicle which are neither included in the olfactory tract nor in the basal ganglia. In the cyclostomata and teleostei, the latter represented by the ordinary bony fish, we find the simplest form of the pallium. It is, in fact, a persistence of the pure embryonal type, consisting of a single layer of epithelial cells, here and there thickened by glia. This structure may be said to represent the beginning of the cortex, and this type reappears in the human foetus. In the selachians, amphibians, reptiles, birds and mammals, this roof contains nervous tissue.

It is essential to examine these structural and functional differences more in detail, and to attempt by a careful comparison between the brain of a vertebrate without a cortex with the higher vertebrate brain, which has a fully developed one, to see if it is possible to define with greater exactness the psychological importance of the higher brain centres. Little has so far been done in this line of study, and doubtless in the future many valuable facts will be brought to light by investigations of this kind. One of the brains which has been most studied and which does not possess a cortex containing nerve tissue, is that of the trout. As far as functional activity is concerned, this cortex may be practically disregarded, as it consists simply of epithelial cells. When we compare the lower brain centres of the trout with those of the higher vertebrates, it is seen that these centres are relatively larger in the fish. The size of the roof of the mesencephalon is very conspicuous. The magnitude of this portion of the trout's brain is not only interesting from a comparative anatomical standpoint, but also throws some light upon its functions as a centre. Here the optic nerve ends, and here, also, are found fibres which connect this centre with the cerebellum, the medulla, and the spinal cord. A system of fibres is also found which connects different parts of the roof of the mesencephalon, supplying an association apparatus which may, to some extent, be regarded as taking the place of an intracortical association system. We also find other connections of importance, but the significance of the connections of the mesencephalon with the diencephalon are not so well understood. In this region in the trout, as in the higher vertebrates, we meet with a series of ganglia, as well as nervous tracts, the significance of which is as yet very little understood. But it is not at all improbable that the anatomy and physiology of the diencephalon as well as of the higher brain centers, will be better understood by studying the results obtained from careful comparative investigations.

The theory which was long ago advanced concerning the functions of the optic thalamus in man, namely, that to a certain extent it was independent of the higher centres, receives some confirmation from the consideration of its anatomical relations. Until the anatomical relations of the cortex to the thalamus are definitely known in detail it will not be possible to accurately determine many of the functions of the higher brain centres.

The knowledge of the physiology of the diencephalon also depends upon the settlement of its structural relations. In animals with a fully developed cortex, the thalamus, when considered functionally as well as from an anatomical standpoint, may be looked upon as an intermediate centre, interposed between the cortex on one side and lower centres on the other. Even in animals without a cortex, the connections of the diencephalon and mesencephalon with the lower centres are very complicated.

Not only, as has been stated, is the mesencephalon itself relatively larger than the corresponding portion of the brain of the higher vertebrates, but the connections with other tracts of the cerebro-spinal system are correspondingly greater. It is also apparent that the absence of the cortex is replaced by the relatively greater development of this centre and its connections. This is a significant fact, and may be made the starting point for investigations of great importance.

If an attempt is made to correlate the physiological function with the structural conditions of the trout's brain, it will be seen that sense impressions, such as sight and smell, may be transferred from the point of reception to brain centres where they may either be again transferred to other tracts, which are in connection with other more remote centres, in the medulla or cord. It is also evident that a possibility of the association of one sense with another is anatomically possible, and although there is no cortex, an association apparatus of really great complexity exists. As far as is known, there is no reason why sense impressions may not be stored in these lower centres, thus constituting what is called memory. And not only that, but there is no valid reason for supposing that the brain of the trout is structurally unfitted for the performance of psychological acts of some importance.

One example will be sufficient to demonstrate what is meant. The trout sees the red color of the artificial fly used by the fisherman. In other words, the *impression* of red formed upon the retina is conducted to the roof of the mesencephalon by the optic tract and there becomes an *idea*. The terms *impression* and *idea* are introduced with the same significance and limitations in which they were first used by Hume. It is not altogether improbable that the power of receptivity of the nervous apparatus of the mesencephalic roof may be increased by the action of

organic stimuli, such as those comprehended in the complex phenomenon called hunger. The various sensations of this "symptom complex" are conveyed to the central nervous apparatus by the sympathetic nervous system, where they may so awaken the latent receptivity of the nervous elements that the impression of red becomes an idea in the sense to which reference has already been made. The derived impulse, as it may be called in the absence of a better term, or the resultant of the association of the ideas "red" and "hunger" may be transferred to the various lower centres in the cerebellum, medulla and cord, and the result may be the spring of the trout toward the fly. The exact method of the transference and association of the primary ideas and the origin of the derived impulse is not the point to be emphasized, but attention is called to the anatomical complexity of the association apparatus even in the fish, and the correlated complexity of function. The assertion that the cortex is not essential for all degrees of memory is a theory which clinical experience does not altogether discredit. As is now known, there is a considerable break in the structural continuity in passing from the simple epithelial form of the trout's pallium to the comparatively simple, yet when considered by itself, really complex structural conditions of the amphibian mantle.

In the amphibian brain, which, as Edinger has shown, closely resembles the mammalian embryonic brain, two distinct layers may, for the first time, be distinguished in the pallium; an outer layer, which contains very few cells, and an inner layer, which is particularly rich in cellular elements.

It is interesting to note that Fulliquet first showed in *protopterus*, a species of mud fish, a point in the ventral portion of the pallium, which was plainly connected with the inner cell layer. From this discovery dates the beginning of the study of the phylogeny of the cortex. Viewed from this standpoint, the brain of the amphibia is interesting, but less understood than the reptilian brain, which has been studied by Meyer, Herrick, Brill, P. and S. Ramon y Cajal, and Edinger.

S. Ramon y Cajal first showed that the reptilian cortex contains essentially the same elements as the mammalian, but the arrangement was simpler, and the number of individual elements less. If we study the reptilian cortex more in detail, we find it composed of cells and fibres, arranged in a certain definite way. The

single elements are to be seen in the amphibian brain, but they are considerably fewer in number and less regularly arranged. In the reptilian cortex we find pyramidal cells, whose axis cylinders form a layer of varying thickness. A small number of these cells send their dendrites to the periphery of the molecular layer. Some of the dendrites of these cells break up into numerous branches soon after their origin, but others form a thick net-work in the molecular layer which rests upon the cell layer, and into this region also penetrate fibres from other parts of the nervous system.

The tangential fibres which occur in the cortex of the mammalia are also present in considerable number, and serve to unite the different cortical areas. Certainly in reptiles, and not improbably in the amphibia, we find a more or less complicated intra-cortical association apparatus. This is a most significant fact in its relations to the problems presented by comparative psychology. Even in this type of cerebral development, relatively simple as compared with the complexity of the cortex of even the lowest type of mammals, there exists an arrangement of cells and fibres which affords manifold possibilities as an association centre. As Edinger has shown, the distribution of this cortex is also psychologically of importance.

The cortical areas are connected with the olfactory tract, and are phylogenetically the oldest tracts which connect the cortex with the lower centres. The exact significance of this fact demands further study and offers a large field for investigation. Here in its simplest form is presented the anatomical relation of the higher and lower brain centres—a relation which is practically not understood in the interpretation of function, but it is one which it is possible to determine. The problem may be briefly stated as follows: Is it or is it not psychologically important that by the appearance of the cortex the anatomical conditions are made more complex, and if so, in what manner? Does the cortex simply add to the complexity of the association apparatus? Does it add to the possibilities for the reception and storing away of sense impressions? And finally, does it permit the exercise of functions which cannot be justly compared with those of the lower brain centres? By carefully studying the functional differences of the brain of the trout and the snake,

keeping in mind the possibilities presented by the difference of anatomical structure, valuable psychological data will be obtained.

The next centre in the cortex to be connected with the lower brain centres is the centre for sight, and that connection first appears in the brain of the bird. It is unnecessary to repeat in detail the facts which have so far been ascertained in connection with the optic centre as seen in birds; nor is it even necessary to repeat the attempts which have been successfully made to homologize the tracts connected with this centre in birds with the tracts connected with the optic centre in the human brain. It is sufficient to simply call attention to the appearance of this cortical centre and its connection with other centers. The importance of a complicated optic centre for the bird is evident when the bird's dependence on sight is considered, but it is not at all understood how the sight of fish is functionally different from that of birds. In the former, remarkably keen or sharp vision is present, without any cortical connections; in the latter, the vision is also very acute, but the qualitative difference is not yet definable. Probably the difference is not one of degree only.

In studying the development of the higher brain centres in the mammalia, it is important to note, as has already been suggested, that the lower brain centres have undergone a process of retrogression, and it is not improbable that functionally, as well as structurally, the importance of the lower brain centres has diminished. The corpora striata in the higher vertebrates are relatively smaller than in the fish; on the other hand, we find the simple epithelial layer which forms the pallium in the fish, in the mammalia is represented by a structure of great complexity. The structural gradations which exist between the cortex of the bird and the cortex of the lower mammals have not yet been carefully studied, so that no generalizations of importance can be deduced from the few facts which are known. It has already been noted that the starting point of the cortex in the mammalia corresponds to the simple epithelial layer of the fish, but at a very early period in the former, nerve cells and fibres, as well as the neuroglia elements, are added to the epithelial structure. The development of the mammalian cortex is but imperfectly understood. No consecutive study of its early development has yet been made, so that it is necessary to look upon many of the views relating to the development of the mam-

malian cortex as hypotheses rather than facts. Little has been added to the discoveries of Kolliker and His. Kolliker showed in the brain of the rabbit that part of the cerebral vesicle which forms the cortex is composed of elongated cells arranged radially. At first, the cellular layer is divided into two divisions—an outer, which represents the gray substance, and an inner, from which the white substance is developed. This is the first disposition of the cellular elements. Later, three divisions may be noticed in the outer layer—an outer and an inner layer, which contains very few cells, and a middle layer, which is rich in cellular elements. Kolliker thinks that in the human brain the same arrangement of elements is to be found, and this arrangement is not improbably similar for all the mammals. But many of the views relating to the development of the human cortex are simply inferences drawn from observations on the smaller mammalian brains. Reference is made to the ontogeny of the mammalian cortex simply to show how the general characteristics of a certain structural type are common to all the vertebrates. During the development of the human cortex, many structural conditions corresponding to those seen in the adult brains of the lower vertebrates may be noted. Few morphological problems present themselves that more forcibly recall the closing line of Darwin's *Descent of Man*, "Man still bears in his bodily frame the indelible stamp of his lowly origin."

For the mammalian cortex, reference will only be made to those facts in the structure which have what may be termed a more immediate psychological importance. The external conformation of the cortex will not be considered for two reasons: First, because the subject is too large a one to treat of even in a limited way; and, second, because the external conformation of the cortex is only of secondary importance. The external form of the cortex does give, but only in a general way, some evidence of the complexity of the internal structural conditions. This fact was at one time given undue prominence, and although the usefulness of this line of study is not to be underestimated, still it should be kept in mind that the essential point relating to the production of psychological phenomena is the arrangement of nerve cells and fibres. As has been already pointed out, the development of the mammalian cortex is imperfectly understood. Most of the views regarding both its phylogeny

and ontogeny are conflicting, and its history, as at present described, is disconnected. Many important facts will doubtless be brought to light by the comparison of the cortex of the lower mammalia with the cortex of the higher apes and of man.

The following structural characteristics may be considered as typical of the adult mammalian cortex. Cajal has shown that four layers are present in the cortex of all the mammalia. The first, or most superficial layer, is the molecular layer, then two layers of pyramidal cells, small and large, and finally the layers of polymorphous cells. In the molecular layer are to be found three types of cells: First, fusiform cells, second, the triangular cells, and third, polygonal cells. The physiological significance of the individual elements is not known, nor is it definitely known how constantly each recurs in the mammalian series. The fibres found in the molecular layer are derived from three sources: They are either, first, the axis cylinder prolongations of the cells of the molecular layer, secondly, prolongations from the cells in the pyramidal layers, or thirdly, they come from more remote portions of the nervous system.

The second layer: In this layer are found the pyramidal cells. The pyramidal cell is found in all vertebrates above and including the amphibians. In the fish, it is said the pyramidal cell does not exist—possibly its prototype may yet be found. It is not essential for present purposes to describe the pyramidal cell in detail with its various processes. In the lower vertebrates the protoplasmic expansions of this cell, as compared with those in the higher vertebrates, are greatly diminished in number, and probably in length. In the batrachians the ascending protoplasmic process ends with the terminal branching, but no lateral branches are given off from the main stem. In reptiles, the basilar expansions are reduced to one prolongation, and the termination of the ascending branch is as simple as it is in the batrachians.

In the human cortex at the time of birth and for a considerable period afterwards, the protoplasmic expansions given off from the base are very short, and have few branches. It is probable that the growth of these prolongations continues even to adult life. It is said that in imbeciles a reversion to the simpler type of this cell has been observed, with a corresponding decrease of the protoplasmic processes. These may be considered as the

fundamental elements of the association apparatus. According to Cajal mental activity stimulates the development of these processes, and so increases the complexity of the system of nerve collaterals not only by strengthening the formation of the associations already existing between certain cell groups, but by actually forming new connections by the expansion of the collaterals. It is certainly an ingenious theory of Cajal that he offers this anatomical explanation for cases of atavism or hereditary talent, depending upon the *transmission* or *non-transmission* of these new connections. If it is considered biologically the theory presents most serious objections. Although the fundamental proposition of John Morley's statement is still true, that "genius must always remain an inexplicable gift," it is not too much to say that even now the mechanism of the apparatus by which it expresses itself has been studied with gratifying results. It is strictly in accordance with the deductions made from anatomical facts to say that the number and extent of the protoplasmic branches of the pyramidal cells are directly related to mental activity. But the statement that the morphology of the pyramidal cell alone is none other than a study of the anatomical condition upon which thought depends needs qualification.

The fourth layer: Polymorphous cells. Here are to be found two distinct types of cells—the so-called sensory or association cells of Golgi, and secondly, Martinotti's cells, characterized by an ascending axis cylinder. The fibres to be found in the cortex are classified under four groups. First, the projection fibres; second, commissural fibres; third, association fibres (in men or the higher mammalia these fibres form the chief part of the white substance of the hemispheres); fourth, the centripetal fibres, which represent probably the termination of the sensory fibres, or at least, the corticothalamic neurons. In reptiles, as well as the mammalia, many of these fibres may be traced through the gray substance to the molecular layer. This is a significant fact, showing that very early in the animal series this layer has assumed considerable importance. In considering the mammalian cortex as a whole, it is impossible to say that it possesses among its elements any one that is characteristic of its functional importance. This is true both of the cells and the fibres as well as their arrangement. As yet nothing distinctive of increased psychical activity has been discovered in the minute

structure of the cell. The works of Kolliker, His, Waldeyer and Van Gohueten have shown that it is impossible to attribute any great psychological importance to single elements. It is certainly unfortunate that the pyramidal cell has been called "the psychical cell." This cell does not exist, as has already been stated, in the fish, but it cannot be doubted that the fish possesses some degree of intelligence, although this has been denied by Cajal. The pyramidal cells, doubtless, have some relation directly or indirectly to the production of thought, but it is not yet possible to so define their function as to be justified in calling them psychical. Only in a few instances may it be said that the volume of a cell is proportional to its functional development. The reverse is often true. Only in a few instances does the volume of a cell bear any proportion to the size of the animal, as for example, the chicken has a larger pyramidal cell than the sparrow, but no functional or even structural superiority may be inferred from this. Neither can inferences be drawn from the arrangement of the cytoplasmic constituents. The question whether certain cells give rise to some specific form of energy is still under debate, and is probably true only in a limited degree. The limitations cannot yet be defined. Neither is the theory tenable to assume that the extent of the interval between the pyramidal cells in different animals may have any great importance. Leaving the consideration of the histological elements, it may also be said that it is not possible, except in a general way, to infer the psychological possibilities simply from the arrangement of the cortical centres. In man the association centres reach their greatest development. Flechsig's statement that they disappear entirely in the lower mammalia must be considered debatable. In the higher apes the association centres reach a development equal to the projection centres. These few facts are really all that is known concerning the phylogeny of the cortical areas. If the endeavor is made to define the exact structural conditions upon which the functional superiority of the human brain rests, it may be said that only two facts are characteristic of increased functional activity: First, the greater development of the protoplasmic processes of the cells, and second, the complexity of the association apparatus as a whole.

It is not possible to refer to Cajal's theory of the psychological importance of the neuroglia, except to say that whether it is true or not, it rests upon a series of assumptions relating to the structure of the neuroglia, the truth of which has not yet been demonstrated. When considered from a phylogenetic standpoint it is seen that the structure of the single elements composing the higher brain centres as we ascend from the lower to the higher vertebrates, as well as the relation of these elements to each other, tends towards a gradually increasing complexity. This must be admitted as a fundamental postulate, and the truth of which depends solely upon recognized anatomical facts. If this axiom is kept in mind the vagaries of certain histo-psychological theories become so apparent that they may be passed over without further notice. Even a cursory examination of the phylogenetic facts shows that it is unnecessary to attribute to certain nerve cells some specific form of action to account for increased psychological function. To give undue prominence to the supposed specificity of certain cells, such as the ganglion cells about the calcarine fissure, is to ignore the relative importance of certain anatomical facts, such as the possibilities of associative action between individual cells on the one hand, and groups of cells on the other. The higher cerebral centres must be considered as a complex whole, and if it is eventually demonstrated that the elements of the various cortical areas differ from each other functionally as well as structurally, this fact will only be a subsidiary one in the explanation of psychical phenomena. Beginning with the lowest vertebrate and ascending the scale to the highest type of mammal is found a varying but progressively complex type of cerebral structure, with which is correlated increasing functional activity.

Phylogenetically as well as ontogenetically, the main fact is apparent that the cerebral structure *as a whole* becomes more complex. Upon no other basis than the acceptance of the truth of this axiom can a comparative psychology be safely founded. Unfortunately, the failure to recognize the importance of this fundamental proposition has resulted in the absurd attempts to found a histo-psychology, of which mention has already been made.

Meynert's theory that the higher brain centres may be regarded simply as an apparatus for the reception, arrangement

and association of impressions is, with a slight modification, consistent with the acceptance of anatomical facts as they are now known.

The structural relation of the higher and lower brain centres has been made plainer by the study of the phylogenetic history of these centres, and some light has already been thrown upon their relative functional importance. The exact relation these centres bear to the varying degrees of consciousness is not yet determined.

The medical profession has made no greater contribution to science than the impetus it has given to the newer and more rational study of psychological phenomena. It is a matter of some importance that members of this profession have been engaged in the search for facts relating to the parallelism which exists between structural conditions and functional phenomena, while more than one school of philosophy has been guilty of endeavoring to arbitrarily limit the parallelism by so-called facts "evolved from the inner consciousness."

THE GENESIS OF A DELUSION.

By A. B. RICHARDSON, M. D.,

Medical Superintendent Columbus State Hospital, Columbus, Ohio.

The inception, growth and fixation of a delusive idea must of necessity prove an attractive study to the alienist. It is the very quintessence of the insane state, and its analysis and elucidation means the clearing up of much of the mystery of that strange psychic disturbance that we call insanity. We can only hope to reach this much to be desired end by a study of the nature of these phenomena themselves, and of the physical states out of which they are developed, and it is through the study of disordered function that we often come to know the disorder of the organ in which it has its origin. In the study of the development of a delusion we may find something to point out the condition of the brain cortex from which it proceeds.

The first thought that is suggested in the commencement of such investigation is that however wild and seemingly unrestricted by the confines of reason the delusions of the insane appear to be, they in reality do have very decided limitations. They are never in the strict sense creations, but rather reproductions, albeit oftentimes under strange groupings, of data formerly stored up in the cortical layers of the particular brain out of which they arise. Fantastic and unreal though they may be they are limited by the imagination of the individual, shaped and restricted as this is by the education and heredity of the particular brain in question. If this is unlearned and of coarse intellectual texture, the delusion will bear the same imprint; if the cortex has been stored with the complex pictures of science and the detail of art, literature and historical lore, then will the delusion of such a cortex take shape from such accumulations, being more refined or more complex or more comprehensive in the play of the imagination.

The heredity of the particular brain often determines in large part the general cast of its intellectual errors in disease. The

brain that is cast in the suspicious mold is very apt to develop persecutory ideas. The over confident and too enthusiastic mind will almost invariably, in its conditions of disease, develop delusions of exaltation and grandeur, while the hypochondriac and the dyspeptic develop delusions relating to the disorders of bodily functions, and the person of dark and depressing cast of mind, inclined by nature to borrow trouble from the future, and to picture this in the sombre hues of melancholy, will become in his disease the victim of the delusions and phantasms that haunted the brain of the "melancholy Dane." The coarse and sensual mind will invariably leave its imprint on its delusions. They are never delicate, refined or deeply contemplative. They do not display the higher flights of the imagination, but are coarse, crude and sensual, like the mind and the environment from which they are evolved. It is true that in many states there is a marked tendency toward moral degeneracy which shows itself as well in the delusions as in the pure emotional disorders, and in persons of original correct moral character we may often find delusions of an opposite moral type from that natural to the individual, but even in these we find the limitations of original brain structure and particular education and environment. The pictures of moral degeneracy in one will be crude, coarse, simple and lacking in complexity and the play of the imagination, in another they may be equally immoral but show the different education, the different environment, and the different brain structure in their greater refinement and their more complex pictures, more consistent in their parts and exhibiting more reasonable deductions from assumed premises. We can constantly see in the delusions of our patients the personality of the individual and we may judge usually very intelligently from them what was the extent of the education, what the particular social surroundings and what the type of brain structure out of which they are projected.

Another particular in which the insane delusion is of interest relates to the method of its inception, the manner in which it first makes its appearance in the field of disease. In one instance it is simply an exaggerated picture of thoughts and impulses originally existent in the patient's mind, an extension in the same line of intellectual features that were always prominent in the individual's mental life. The suspicious man simply be-

comes more suspicious, the irritable, more irritable, evolving gradually the delusions of persecution and suspicion, intolerant of opposition, simply and only to a greater degree than formerly. The enthusiastic, restless and uncertain person only becomes more easily enthused, more recklessly extravagant in speech and act until gradually there appear delusions of exaltation. The sallow faced and melancholy visaged, who by nature is always looking at the landscape through glasses of sombre hue, simply becomes more melancholy, finding in more objects and in more features of his environment food for his dismal reflections and prophecies, and these themselves simply becoming more dismal and more unreasonable. The hypochondriac, whose intellectual life has largely centered on himself, and who has always exaggerated the petty signs of organic or functional derangement in his bodily parts, simply becomes more hypochondriacal, his ideas of existing disease in his organs only a little more unreasonable and more fixed. The individual of deeply religious and devout mental cast, with sensitive conscience and remorseful thought, only shows greater concern about his spiritual welfare, is more than usually affected by religious teaching, and more than usually self-condemnatory, until his thoughts become fixed in the belief in the unpardonable sin, eternal condemnation and the hyperaesthetic conscience of self-debasement.

There is usually no day and no week in which we can look back and say, then the delusions first appeared. They come step by step, evolving degree by degree until they finally gain the distinctiveness of fixed idea and organized form. In other cases, however, they would seem to leap into existence in a day or an hour. They suddenly project themselves where the day before nothing resembling them was seen, to the awe of the beholder and the consternation of friends. Often this suddenness is only apparent, not real, and a close study of the intellectual life of the individual will show that the delusive soil has been preparing for weeks, months or years. Perhaps the patient has had years before an attack of mental disturbance from which he emerged more or less changed, never again so sure or intellectually so well poised, or he may have been for years or months slowly losing ground physically, with a corresponding mental change so gradual that it was but little remarked by friends.

In a certain few, doubtless, the delusive idea is of sudden development and in these I believe it will be found that the physical disorder from which it is developed is also of sudden onset. Thus we may see the sudden appearance of delusions in the course of the delirium of an eruptive fever, within a day or two of childbirth, or after the shock of grief or disaster or unexpected joy. They may even appear suddenly in the course of a bodily illness of weeks or months duration, because from some cause there is added something in the brain that depreciates still further its functional power and brings out the delusion. This leads us to mention a conclusion that has often been made very vivid to me by the results of my experience and that is that delusions are often only expressions in terms of mind of corresponding bodily disorders. For instance it is often said that the primary mental state in mental disorder is always one of depression, although this is often transitory and fleeting and passes rapidly into the opposite state of exaltation. As far as this is true it seems to me that it is because then the physical state is nearly always that of depression and conscious discomfort and suffering.

The dyspeptic is very prone to develop delusions of animals or other foreign bodies in the stomach, or of the absence of digestive organs or of their transformation into other substances. When, as often happens, he begins to assimilate nourishment easily and in large quantities, his delusions nearly always change. They lose their reference to the digestive organs and their depressing character and either disappear wholly or become expansive in character and of pleasing type. The hallucinations of hearing and sight, and the less common illusions, are only delusions in relatively limited fields, and these are notably the expression of localized disease in their particular sense centres in the cortex. In delusions of exaltation, even of the paretic, there is nearly always, if not invariably, an exaggerated nutrition, a rapid flow of blood and a very rapid interchange, albeit a chaotic one, of elements in the brain cortex. The supply of nutritive pabulum is excessive but the waste of destructive change is still more excessive and the result is that cortical elements degenerate and melt away and with them fade away the extravagant delusions and the wonderful visions of the paretic imagination, leaving mental darkness and vacuity and physical

disorganization and debris. In the melancholy and depressed there are the sallow complexion, the rapid loss of weight, the heavily coated tongue, the sluggish circulation, the torpid liver, the obstinate constipation, the general diminution of the excretions, that indicate the prominence of autotoxic influences in the causation of the disease. The circulation of many of those poisonous substances in the system evidently induces delusions of a melancholy and depressing character, and it is only when this type of delusion degenerates into a kind of mental habit, worn simply as a garb of thought, that they are accompanied by improved nutrition and a more active state of the excretions.

This leads us to a consideration of the manner in which delusions disappear. They often seem to be most uncertain and inexplicable in their ending, and yet this is usually more apparent than real. Their departure is generally more or less gradual, and usually connected with corresponding improvement in physical states.

The actual disappearance of the delusion may be sudden but the condition of the brain has generally been leading up to it more or less gradually for days, weeks or months. A marked example of this came to my attention among our patients to-day. A man of about fifty-eight years of age, of fair education, for thirty years a passenger conductor on one of our leading railroads, about twenty-one years ago through over work and some financial strain, developed an attack of melancholia with persistent refusal of food. He was of dark, sallow complexion, black hair and heavy visage, by nature inclined to periods of despondency. In the course of six months he fully recovered his health both physically and mentally. Since that time he has continued his work on the railroad until last year it was noticed he was failing some in health. His color was more sallow, he was absent-minded and forgetful of his duties. He gradually became despondent and finally about October, under the added strain of a considerable pecuniary loss he again developed marked delusions of a melancholy type, persistently refused food, believed he was condemned every night to be cut to pieces and subjected to tortures of infinite refinement and variety. He did not sleep, his tongue was heavily coated, his bowels extremely sluggish, his appetite gone, he was rapidly losing weight and his color was very bad. He was brought to the hospital and until last Monday,

a period of about six months, his delusions continued and were unchanged in type. He was fed at first forcibly and after a few weeks by persuasion. He was given sleep with a hypnotic for some time but the amount was diminished as he showed an inclination to sleep without it, his physical condition was gradually built up, he began to increase in weight, and improved in color. He constantly asseverated the same delusions, but as the weeks passed it was plain to be seen that these did not impress him so strongly and he gradually dropped some of their refinements; his assertion of them became gradually more perfunctory and his countenance did not exhibit the intense mental suffering that it showed in the beginning. He could be more easily induced to do things at variance with his expressed delusions. About ten days ago he was given permission to take walks in company with a trusty patient. In two or three days there was a most marked change. He ceased talking of his delusions and in a day or two it was discovered they were entirely gone. To-day, in conversation, he is cheerful and bright, has no delusions whatever, has absolutely forgotten that he ever had any such as we have described; has a keen interest in current events, asked me as to President McKinley's cabinet, was surprised to learn of John Sherman's resignation as senator and his appointment as Secretary of State, and heard for the first time of the appointment of our Mark Hanna to be his successor, although the daily papers had come every day into his ward during the progress of these events so deeply interesting to us Ohioans. The change was marked and apparently sudden, but in fact the physical condition and the mental state had been gradually preparing for it for weeks previous.

Again, delusions disappear with approaching dementia, because degeneration of cortical elements then becomes prominent and the one keeps close pace with the other. In the forms of disease in which delusions remain fixed and continue indefinitely, while there is an original nutritive error, which is fixed and stationary in the cortical substance, there is also decided functioning capacity still remaining, and it is from among these that we get our most intelligent and capable workmen among our patients. The continuation of delusions nearly always means the retention of a considerable degree of structural complexity in the brain, and the organic degeneration is less ex-

tensive. As the delusions become less complex and more disjointed and incongruous the brain cortex becomes more disorganized and reaches a less complex structural arrangement. Again as showing the close relation between the condition of the cortex and the delusive phenomena evolved from it, it may be noted that when the delusions are changeable from day to day, assuming from hour to hour even, a multitude of forms, we have every reason to believe that the pathological state of the cortex is also rapidly changing, and the prospect for ultimate recovery is more hopeful because of the more transitory character of the physical disorder.

On the other hand when the delusions are fixed and unchanging, continuing month after month, we find the condition of the cortex also remaining fixed and the prospect of recovery is much less favorable. In the cyclical form we usually see much the same correspondence between the psychic phenomena and the physical states. When the patient is in the despondent period the body weight diminishes, the pulse is lowered in volume and tension, the appetite is impaired, the digestion is imperfect, there is a poisoned state of the blood from imperfect and sluggish excretions and often a passive congestion of the cortical vessels, while during the state of exaltation the digestion is much improved, much more food is assimilated, the excretions are more active, the pulse is quickened and the tension raised, and the symptoms point to a marked increase in the supply of nutrient material to the cortex. In fact the supply and the waste are then usually both excessive and with it the flow of ideas is more rapid and the delusions of a pleasing type.

Lastly it is interesting to consider what significance is to be attached to delusions as evidences of the existence of mental unsoundness. Are they reliable evidences of insanity even when they are clearly outlined and firmly fixed? It would seem so, it is true, and they are usually assumed to be conclusive of the presence of a pathological state, and yet we meet sometimes with facts that seem somewhat at variance with this conclusion. Let me cite a case in illustration. About a year ago there was admitted to the Columbus State Hospital a man forty-three years of age, a farmer, of moderate education and rather more than usual intelligence for one in his walk of life. He was deeply

religious and a devout member of the Baptist church. He had suffered from severe headaches periodically for years, which were made worse by working in the heat of the sun and these had finally developed into attacks somewhat resembling petit mal, of which he had had several at irregular intervals during several years. Some of these were severe, some mild. For four or five years he had shown decided delusions of a religious character, believed he received revelations from God and Divine commands by which he was guided and controlled. A short time before his admission, under the influence of these delusions, in obedience to what he believed a Divine command, he had gone to church, driven the preacher from the pulpit and took possession himself, maintaining that the church was corrupt, and the members living hypocritical lives. At the hospital it was noticed that he was somewhat depreciated in general health, his color was bad, he had not slept well and his nutrition was below par. He soon gained, was quite intelligent, very reliable and honorable, could be trusted to any extent under a promise, and while maintaining the existence of revelations from God and control by Divine commands, he promised to refrain from any act of violence and conceded that he had gone too far in his acts at the church. In the course of two months he was so much improved that he was permitted to go home on a visit. The neighborhood was much exercised on account of his former act of violence, however, and when he told some of the members of the church that they were living hypocritical lives, and that God had told him that it was his duty to reprove them, he was sent back to the hospital. He had a severe attack of headache and a mild epileptiform attack soon after his return, his mental condition remaining unchanged.

Two or three weeks after his return his wife visited him for the first time. She was a woman about thirty-five years of age, well nourished, of ruddy complexion, unusually healthy looking, and seemingly rather timid and retiring in disposition. She surprised me by asking, after I had recited the symptoms in her husband's case, if I believed him insane. When I told her that I thought there could be no question about it, she said, "then I am insane too, for I believe the same that he believes." I then questioned her more closely. I found that she had always been a very healthy and robust woman

and never had any illness of any character. She said she and her husband were both members of the Baptist church and attended all the meetings regularly. Several years before, she said, one winter during a period of church services, popularly called a "protracted meeting," one evening at home, while she and her husband were engaged in their evening devotions, they were suddenly and simultaneously impressed with the idea that they had received a revelation from God and that whatever they did henceforth was to be by direct Divine command. They had both acted consistently with this ever since. She said it was shown to them that her husband was to be bold and aggressive and to go out among men, while she was to be meek and submissive. Her husband had not been able to do hard work, but they owned a good farm of moderate size, were thrifty and succeeded in business and had several children. It was only when the husband attempted to carry into effect some of his peculiar ideas on the outside that any trouble arose and she believed he was only doing right in what he did. In every other respect she showed no sign of disease and was the picture of rustic healthfulness, although impressing one as a woman of yielding nature and more than usually impressible disposition. She made several visits in her efforts to secure her husband's release, which I refused to grant. She was always agreeable and made no arbitrary demand. She said it was shown to them that her husband would not have to do any such act of violence again and she willingly pledged her word that such acts should not recur if he were again released. Finally after several months I did release him on trial, and since last fall he has been living at home in quiet and the peaceful enjoyment of his home, but I doubt not with the same ideas of Divine revelations and guidance in the mind of each.

Now, as to the lesson. There can be no question, I take it, of the existence of disease in the husband. His frequent severe headache, his epilepsy, if it could be so called, and his failing health generally, all indicated a pathological basis for the delusion, but in the wife all these were absent. She did not show any sign of ill health otherwise, and I doubt not that what she believed to have its origin simultaneously in each, actually arose in the diseased brain of her husband, and was at once adopted by her own in the state of acute sympathy and religious

fervor which controlled her at the time, and had been made a part of her thought since through her habit of taking her thoughts from the more positive character of the husband. The question is, is there disease in the one case as well as in the other, or does the significance of the delusion differ in the two, being an undoubted insane delusion in one and in the other only erroneous opinion arising in suggestion and the influence of strong religious fervor. The delusions of the paranoiac are interesting in their development. It is hard to distinguish where they pass into disease. They very frequently exist for years in a formative stage, appearing only as peculiarities of character and slowly developing eccentricities. Indeed it is very puzzling to know where eccentricity and idiosyncrasy reach the point that the lesion of judgment and the defective reasoning are sufficiently clear to justify the determination of disease. Doubtless there is a corresponding departure of the cortex from a normal state, a gradual departure, that is only an exaggeration of conditions in it already somewhat unusual, marked variations in its nutritive state, for instance, and extreme contrast in the character of the blood circulation in it.

It is proverbial that such persons go readily from one extreme to another, being at times unaccountably and extremely depressed, at others unreasonably exalted and reckless in expression, all this being a condition natural to the individual and out of which the paranoiac delusions appear almost imperceptibly and with extreme insidiousness. Again, have you ever considered that the delusions of which the individual is conscious, of which he recognizes the pathological character, as sometimes happens at certain stages of them and in certain individuals, are almost if not quite invariably of an unhappy type? It would seem that the realization of the peril in which the patient stands, just as the consciousness of bodily illness in the stage before mentioned, gives an impress to the ideas which grow out of the disease. I have had patients of this type reason intelligently as to the delusive ideas that were developing and their import, and very naturally their distress and depression would be extreme and difficult to remove. They are doubly cursed by harassing doubts as to the actuality of the delusive idea, and by the consciousness that whether real or not their condition is one fraught with great danger to themselves. No more pitiable object can

be imagined than such a victim of the curse that was laid upon his conception. As Anstey makes Stella Maberly say in that interesting outline of the evolution of a paranoiac, "I seemed to be in the grip of some paralyzing force which would not relax by any effort of my own will, which made me hard and cruel in spite of myself."

THE PSYCHOLOGY OF INSANE DELUSIONS.

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In my experience among the insane I have been led to certain views in regard to their delusions, which, although not, perhaps, original in any particular, I do not remember to have met with anywhere in a connected form, and it may, perhaps, be worth while to spend a few minutes in considering the origin and significance of this very important class of symptoms of mental derangement.

A delusion is a false belief. It scarcely need be said that false beliefs are not confined to the insane—no one is exempt from them. Nor is the evident improbability or absurdity of a belief necessarily a criterion of the mental soundness of the person entertaining it. The belief in an actual fact may be a symptom of insanity—an insane belief, if not an insane delusion. Thus, if a man suspects the fidelity of his wife on grounds that to a normal mind would have no bearing whatever on the question, or confidently asserts her infidelity without being able to give any reason for his belief, even if it should appear that she was actually unfaithful, that fact would be of no importance in deciding the question of his insanity. On the other hand, beliefs as absurd as any found among the inmates of an insane hospital have been, and are held by multitudes of perfectly sane people, including many of those most eminent among their contemporaries for intelligence and wisdom. Thus, I have had several patients who declared that the food furnished them was human flesh. I held that belief to be an unquestionable symptom of insanity, but when a Newman or a Mivart believes, in all sincerity, that the consecrated wafer is actually and literally the flesh of Jesus Christ, that does not, to my mind, in the slightest degree impugn his sanity, or even the soundness of his judgment on ordinary matters, although the one belief seems to

me as much a delusion as the other. All will admit that both are equally contrary to the evidence of the senses, but all must likewise admit that our senses sometimes deceive us. The Roman Catholic believes that he has an infallible proof, in this case, to set against the evidence of his senses, and believes it on grounds that have weight with all sane people. The insane person, on the other hand, has no proofs which others can appreciate—a sense of absolute certainty in his own mind.

The question, then, in any given case, is not of the truth or falsity, or even of the plausibility or absurdity of a belief, but whether it is the result of what we recognize as the normal working of the mind under the circumstances or the effect of disease. It is the manner of origin, not the substance of insane delusions that differentiates them from the beliefs, whether true or false, of the sane. In considering the origin of insane delusions, we may, I think, start with the assumption that, in this regard, at least, disease confers no new powers on the brain. Its effects are in the direction of impairment, and whatever phenomena are manifested by the diseased organ are the remnants of its physiological functions. If this is the case, it follows that we must look for the causes of insane delusions along the line of action followed by the normal mind in forming its beliefs. We may, I think, divide the circumstances that affect our beliefs, after our usage in speaking of the etiology of diseases, into predisposing and exciting causes. Under the former head we may distinguish, as affecting a person's receptivity to new beliefs:

First.—The individual's previous mental equipment: It hardly need be mentioned that our judgments are profoundly affected by our previous knowledge and habits of thought. The child accepts without question the statement that his baby brother was found under a cabbage-leaf in the garden, or that his Christmas gifts were brought down the chimney by Santa Claus, because, as we say, he knows no better. In like manner, it is evident that if a man's memory is impaired by disease, the materials for a sound judgment are, so far, lacking, and he will be unable to correct any notion contradictory to experience that arises in his mind. It is also self-evident that a man who never heard of Freemasons or Roman Catholics, of electric batteries or telephones, will not have the delusion that he is persecuted

by any of these agencies, nor will the untutored heathen imagine that he has committed the unpardonable sin, or that he is Jesus Christ.

Second.—The soundness of the person's judgment: In order that we may form correct opinions, it is necessary, not only that we have the facts before us, but that we have the power of comparing and discriminating the data. Many persons of much knowledge have little wisdom, and others whose memory is impaired, by old age, for instance, show excellent judgment when the facts are before them. Probably all of us have had experience, in dreaming, of the absurdities that seem perfectly reasonable and natural when our intellectual powers are partly in abeyance. In disease the judgment is quite as likely to be impaired as the memory, and to the extent to which it is affected the individual is disqualified for distinguishing between truth and falsehood.

Third.—The person's emotional condition: As most of us are aware, in regard to other people, if not to ourselves, a man's beliefs are profoundly affected by his feelings. Happiness makes us inclined to expect continued good fortune; misfortune leads us to forbode evil. We readily believe good reports of our friends, and injurious ones of our enemies. We are always inclined to distrust a man's judgment in regard to a matter in which his feelings are deeply interested, because, notwithstanding the immense influence which emotion has over our beliefs, it is utterly worthless as a test of their accuracy.

No class of mental states is more commonly affected by disease than the emotions, and it is probably safe to say that emotional disturbances play a larger part in the genesis of delusions than any other single factor, so far, at least, as their general character is concerned. As we often have opportunity to see in general paresis, there may be very advanced dementia without any evidence of delusion, provided the emotional state is indifferent. If, however, there is elation, we immediately have the extravagant delusions of personal importance, power and wealth, and in the rare cases in which the emotional tone is one of depression, the distressing delusions are equally extravagant, as in the case of a woman recently under my observation, who insisted that she had no head, and obstinately refused food on that account. In cases like this, there is, of course, profound impairment of

judgment. When, as is often the case in melancholia and paranoia, there is little obvious intellectual enfeeblement apart from the subject matter of the delusions, they usually have more consistency, both with themselves and the possibilities of the case, but their dependence on the emotional tone of the patient is equally obvious. It has long been recognized that the melancholic is not low-spirited in consequence of his belief that his soul is lost, his family dead, the whole world ruined by his wickedness; he believes these things because he is so depressed that nothing but the most horrible calamities he can imagine can harmonize with his feeling of wretchedness. I think it may safely be said that not only do the delusions, in any case of powerful morbid emotion, correspond with the emotional tone, but that delusions on subjects indifferent to the patient, if they occur, are neither persistent nor firmly held.

Kraepelin takes the ground that an insane delusion is always the expression of general mental enfeeblement, and that where the latter is not manifest, it is because the topic of the delusion forms, so to speak, the point of least resistance. It is not clear to me that such is necessarily the case. As a matter of fact, in many cases of insane delusion, the absurdity of the morbid belief stands in sharp contrast with the patient's shrewdness and soundness of judgment in regard to other matters, and I do not think such an hypothesis is at all necessary on theoretical grounds. It is, of course, evident that the intelligence of a person entertaining an insane delusion is impaired in regard to that particular subject, but we daily see the judgment of sane people warped by their passions and their prejudices. Why should not the same be true of the insane? I will not positively assert that overwhelming morbid emotion ever does occur apart from some degree of dementia, but I think it safe to say that if such a case should occur, the formation of delusions might be confidently expected. When the ground is prepared by morbid emotion and impairment of judgment for the formation of insane delusions some trivial circumstance may determine the particular shape that they are to take, as a thread or a grain of sand in a saturated solution may form the nucleus of a mass of crystals. We come, thus, to what I have called the exciting causes of insane delusions:

First.—Imagination: Whether in the sane or insane, it is by

the exercise of the imagination that the conjectures are framed which, when not contradicted by our judgment, are consolidated into beliefs. Without it, our reasoning powers would have nothing to work upon. We are all more or less prone to believe whatever comes into our heads, especially if it coincides with our state of feeling at the time. When memory and judgment are impaired, or in the presence of a strong emotion, this tendency is not counteracted, as in reasonable moments, by experience and judgment, and the most absurd fancies may be taken for certain truth. It is not necessary, in order that such should be the case, that there should be any actual disorder of the imagination, although it is likely enough that such may occur. If any of us should give expression to all the absurd notions that pass through our mind, we should not probably long escape suspicion of our sanity.

Second.—External suggestion and authority: No one who has had much to do with the insane can have failed to notice that in a large proportion of cases they are little inclined to adopt each other's delusions, and are, in general, much less influenced than in health by the opinions of others. Such is not, however, by any means universally the case. With many paretics, for instance, it is perfectly easy to suggest delusions, and it is not extremely uncommon for several persons—sometimes a whole family—to adopt the delusions of an insane person, and become as unreasonable in their conduct as he. It may, perhaps, be questionable whether, in cases in which a short separation suffices to restore sanity of conduct, the imitators, in such a case, are more insane than those who adopt the absurd beliefs of sane people on no other ground than confident assertion.

Third.—Sensory disturbances: We are all familiar with the powerful effect which hallucinations exercise in exciting hallucinations in cases of paranoia, for instance. Sensations are at the very foundation of all our mental activities, and are, with most people, the final test of truth. If our senses play us false, the data of correct judgment are vitiated. It may be doubted if the strongest mind would hold out against persistent hallucinations of sight or hearing. The man who constantly hears voices threatening or insulting him may, for a time, correct the faulty sense by those that are sound, or accept the explanations of others, but if the hallucinations persist, he is pretty sure to end

by believing that they originate outside of himself. Not only hallucinations, but sensations, normal in themselves, may excite delusions in those who are predisposed to them. The paranoiac may interpret the whistling of the wind as the cries of his wife and children, and a headache or colic as the effect of poison administered by his imaginary enemies. A woman under my care, suffering from disease of the spinal cord, attributed the paræsthesiæ in her legs to a lizard that was preying on them.

The foregoing factors seem to me to account for most if not all of the delusions met with among the insane. I believe that in every case presenting this class of symptoms, dementia, emotional disturbance or hallucination, singly or in combination, may be discovered, and that the delusions will be found to harmonize with these psychical antecedents. If these views are correct, delusions, in the insane, are always secondary to other psychical disturbances, and it is not strictly correct to speak, as is sometimes done, of a primary delusional insanity. Let us consider, for a moment, what that term implies. We will suppose, for instance, the case of a man whose only obvious symptom of mental derangement is an unfounded belief that he is persecuted by the Freemasons. If that is the only delusion, and the delusion is the primary derangement, it must follow that if he did not have this belief he would be of sound mind, and, as he could not have it if he had never heard of the Freemasons, that he would not, in that case, have become insane. I do not suppose that any one here would maintain that such is the fact. The man, in such a case, is not insane because he suspects the Freemasons; he suspects them because he is insane. He is insanely suspicious, and if he had never heard of them, his suspicions would inevitably have found some other object. Morbid suspicion and morbid self-conceit, in the majority of instances, combined with hallucinations, are the underlying mental conditions in this class of cases.

To recapitulate; beliefs, whether true or false, in the sane or insane, are never, in my judgment, primary mental phenomena. They are the relations in which the objects of our thought appear to our minds, and are determined, on the one hand, by our previous knowledge and habits of thought, our powers of comparison and discrimination and our emotional conditions, and on the other, by the material supplied by our sensations, our im-

aginations and suggestions from without. It is in the disturbances of these processes by disease that we must look for the explanation of delusions in the insane.

DISCUSSION.

DR. H. M. HURD: We are very fortunate in having these two papers on the Genesis of a Delusion and the Psychology of Insane Delusions. I think that while the papers have had points of contact they have generally kept separate and distinct grounds. The first paper gave a description of delusions and the second supplemented it by showing how delusions originate and why we consider them to be such. In Dr. Worcester's effort to show that delusions are the results of insanity and that a man has delusions because he is insane is there not a little danger that we may lose sight of their real influence upon our diagnosis of mental disease? Whatever may be the primary condition, I think there is no doubt that the presence of a delusion is frequently the only evidence we get of mental disease.

DR. E. N. BRUSH: It seems to me, as Dr. Hurd says, that we may be in danger of losing sight of the prognostic as well as the diagnostic value of such delusions. I arose, primarily, however, to ask Dr. Worcester the question, why he objects to the term "primary delusional insanity"? Because the delusions are not "primary" in the earlier conditions of the disease does not at all militate against the term "primary delusional insanity."

DR. BURR: I should like to inquire of Dr. Worcester if it would not be better to restrict the definition of delusion to "false belief due to disease," speaking of other false beliefs as such and applying the term delusion strictly to false beliefs which are the result of a morbid condition of the mind.

DR. WORCESTER: I would merely say, Mr. President, in reply, that I did not at all mean to belittle the importance of delusions. They have their diagnostic value but we must, in determining their importance, endeavor to get at the grounds upon which they are based. Now, in the case mentioned by my predecessor, the woman who adopted the delusion of her husband, I have very little doubt that he is correct in his judgment. It was in him an evidence of insanity, but it was for her a perfectly normal thing to adopt an absurd belief in compliance with what he said. The history of the religious beliefs of various sorts is full of in-

stances, in my opinion, in which the delusions of insane persons have been adopted by great numbers of people.

As to the definition, I would say that I do not see any reason for restricting the term delusion to the delusions of insanity. It is not so restricted in ordinary usage and I do not see why we should do so. The delusion was the same, in the case I have just spoken of, in the person of sound mind as in the insane person and it was as truly a delusion in the one case as in the other, but it arose in a different manner and was held on different grounds. As to the objection to the term "primary delusional insanity" it seems to me it makes the delusion appear to be the primary fault, while as a matter of fact it is not and it is desirable to have, so far as possible, our terms comply with the facts.

PRELIMINARY REPORT, CLINICAL AND PATHOLOGICAL, OF A CASE OF PROGRESSIVE DEMENTIA.

By CHARLES K. MILLS, M. D., and MARY A. SCHIVELY, M. D.,
Philadelphia, Pa.

The case presented the following history: Patient—aged sixty-four years; married; was always of a nervous, somewhat irritable temperament, but mentally bright and clever with linguistic and other accomplishments. After the birth of her first child she had an attack of mania. When about twenty-three years of age she had chorea which lasted for several weeks. When thirty-five years of age, apparently as the result of unusual worry, she became more irritable and her temper was afterwards capricious. For a period of ten years preceding her death, she was subject to spells of excitement which almost amounted to transient derangement, but she had no tangible delusions, although she had a tendency to persecutory ideas. About the same time, she began to show a decided amnesia for names; this gradually, but surely, increased. She had, however, no motor aphasia but could converse and write well until within three years of her death. During the third year previous to her death, she became so unreasonable that it was almost impossible to live peaceably with her, she having at times outbursts of uncontrollable passion.

During the second year previous to death she had two attacks of what appeared to resemble la grippe; during which time she complained of intense pain in the head and back; from the first of these attacks she recovered, but from the second she did not, the pain in the head being persistent and always referred to the right parietal region; insomnia was marked. General failure of memory was observed about this time and she became half bedridden. During the last eighteen months of her life she was confined to bed continuously. Her chief symptoms during this period were vertiginous attacks; difficulty in orientating herself, and marked amnesia not only for names but for recent events.

She gradually became feebler mentally and during the few months preceding death was in a state of decided dementia with occasional spells of excitement. Her attempts at conversation were childish and she had numerous transient, unsystematized delusions. An ophthalmoscopic examination made one year previous to death was negative. There were no bed sores and no paralysis at any time. The case was one in which the entire fabric of the mind seemed gradually to break up and step by step failure of the mental and physical powers progressed. On November 5, 1896, she suddenly became comatose and died the next day.

The post-mortem examination was made on November 7th by Dr. Burr and Dr. Kelly. The following pathological conditions were present: The dura was somewhat thickened; the pia-arachnoid was opaque. The vessels of the base of the brain were atheromatous; the anterior communicating artery showed aneurismal dilatation. The pial vessels on the ventral surface of the pons showed miliary aneurisms. Portions from six regions of the cortex were removed and hardened in alcohol; the remainder of the brain was placed in Müller's fluid.

Microscopical examination reveals the following pathological changes: Sections stained with thionin (according to the method of Lenhossek) and by methylene-blue (Nissl's method) show internal changes in the neuron. These changes consist in irregular arrangement of the chromophilic particles of the cell-body—disappearance of these from some areas and aggregations in others—giving the cell-body a vacuolated appearance. The chromophilic particles are absent from or sparsely scattered through the cell processes. The nuclear changes consist in absence of large chromophilic particles, while the finer dustlike particles and the normally clear karyoplasm stain irregularly; the nucleolus stains deeply.

External cell changes (as demonstrated by the silver phosphomolybdate method of Berkley) consist in roughening and deformity, extending in some cases to excavation of the cell corpus. The basilar dendrites show moniliform swellings along their course or present clubbed extremities; in some cells there is loss of several dendrites. The apical dendrite is roughened and deformed in contour. The axis cylinder remains intact. The long

pyramidal cells seem to be most affected by these changes. The Purkinje cells show thickened stems with short, stumpy branches in place of the complex feathery dendrites of the normal cell.

The protoplasmic glia cells present a series of transitional changes; the fine mossy granulation appearance of the pseudopodia is lost and varicose swellings appear in their course. Other cells take on an irregular, botryoidal appearance and finally evidences of disintegration are to be observed. Deiter's cells are numerous both in cerebrum and cerebellum.

The basilar and internal carotid arteries show increase in the number of true endothelial cells and a growth of new connective tissue derived from the endothelium. This growth consists of branching cells, proliferated nuclei and basement substance with areas of atheromatous degeneration. In the posterior communicating arteries the intima, media and adventitia are about equally thickened. The anterior communicating shows aneurismal dilatation. Thrombi are present in all these vessels.

The pial vessels show stasis, aneurismal dilatations, tortuosity and thickening of their walls, with nuclear proliferation. In all regions there are evidences of extravasated blood in the form of groups of corpuscles and hæmatoidin crystals. The region of miliary aneurisms shows similar changes.

All cortical vessels are over-distended with blood corpuscles; they are exceedingly irregular and tortuous in their course and appear to be greatly increased in number. The perivascular lymphatics are distended.

Areas of softening occur in the right ascending parietal region; they consist of a reticulated stroma surrounding a central cavity which contains portions of blood vessels, blood corpuscles, hæmatoidin crystals and fragments of nerve and neuroglia tissue. Areas of coagulation necrosis are present in the left ascending parietal region.

Medullated fibres of the ascending parietal region, optic chiasm, and of scattered areas in the pons and medulla show different stages of myelin degeneration.

In addition to the methods above referred to, sections were stained with hæmatoxylin and eosin; hæmatoxylin, picric acid and fuchsin, and according to the Weigert-Pal method.

In conclusion the pathological features of the case may be summarized as follows: First, Internal and external changes in

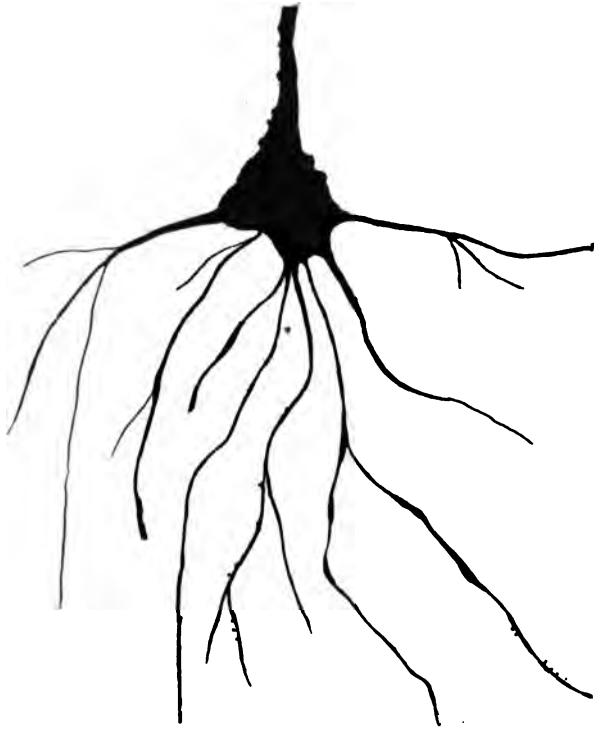


FIG. I.—Long pyramidal cell from the middle occipital convolution, showing roughening of the cell corpus and apical dendrite; moniliform swellings on the basilar dendrites; also loss of gemmule.



FIG. II.—Long pyramidal and fusiform cells from the second frontal convolution, showing irregularity in contour; also excavation of the cell corpus; deformity of basilar dendrites; also moniliform swellings of the apical dendrites.

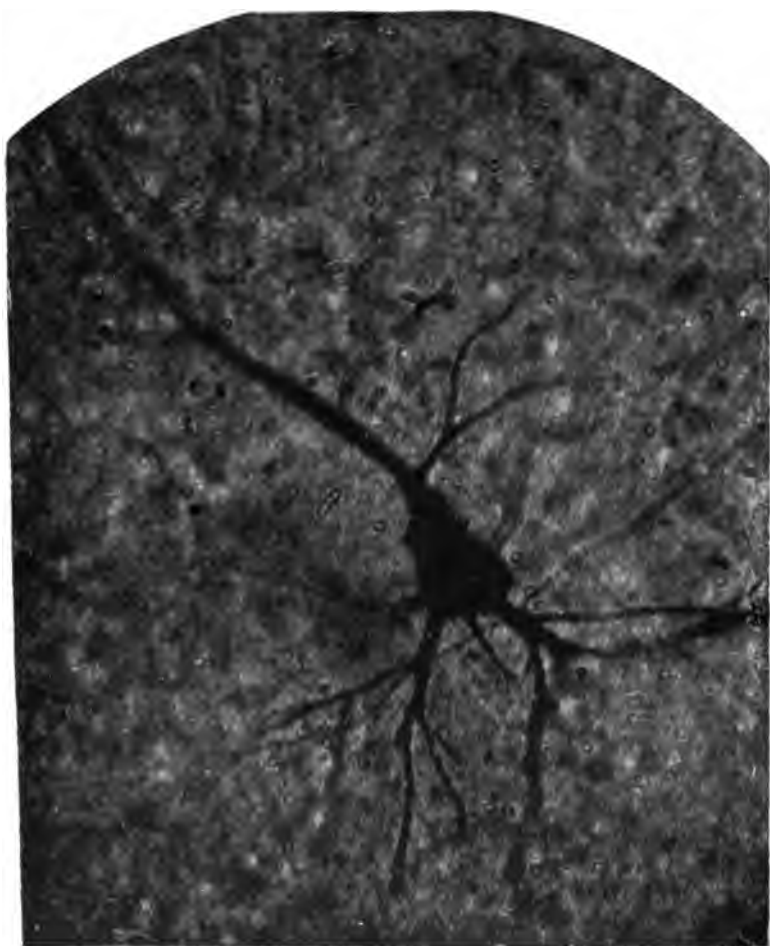


FIG. III.—Photo-micrograph of a long pyramidal cell from the ascending frontal convolution, showing roughening of the cell corpus and of the apical dendrite; also moniliform swellings of some of the basal dendrites.

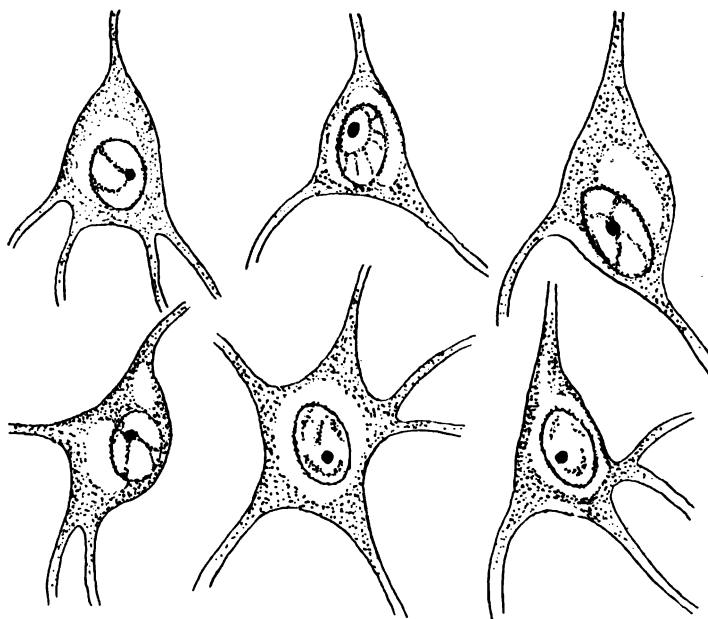


FIG. IV.—Long pyramidal cells from the second frontal convolution, showing vacuolated appearance of the cell body; diminution of chromophilic particles in cell processes; and nuclear changes.

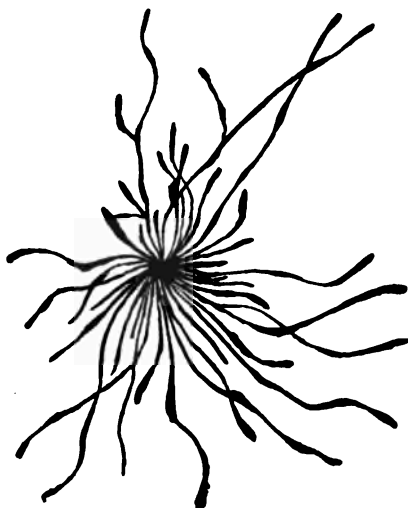


FIG. V.—Protoplasmic glia cell, showing loss of fine mossy granulation, and the presence of varicosities on the pseudopodia.



FIG. VI.—Section from the middle frontal convolution, showing stasis, overdistension of the vessel walls, enlargement of perivascular lymphatic space; also area of softening.

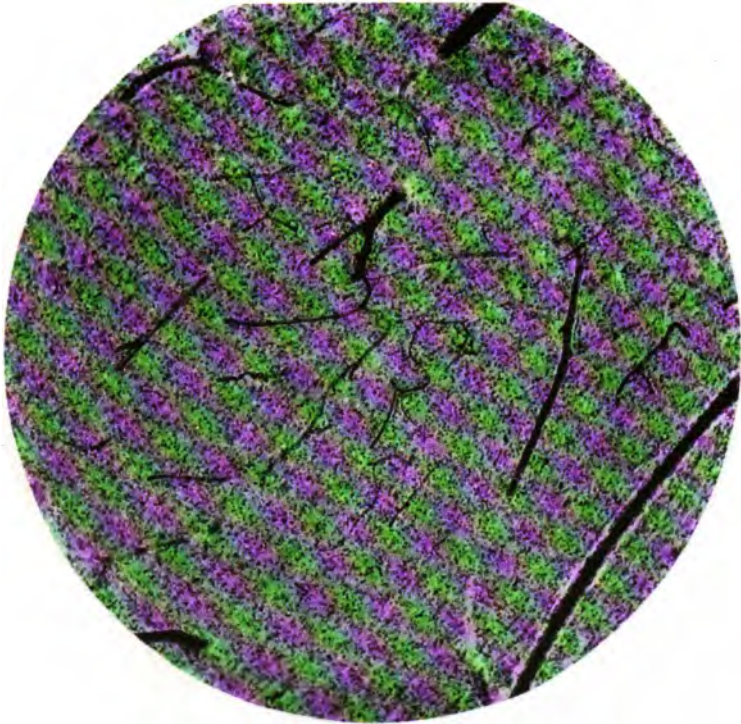


FIG. VII.—Section from the ascending parietal convolution, showing stasis; over-distension of the vessel walls; tortuosity and multiplication of vessels.



FIG. VIII.—Section in the second temporal region, showing changes in the meninges; thickening of the pia-arachnoid; evidences of extravasated blood; thickening of vessel walls.



FIG. IX.—Section of basilar artery, showing atheromatous condition of walls; also thrombus.



FIG. X.—Area of softening from the ascending parietal region, containing portions of blood-vessels, blood corpuscles and h matoidin crystals.

the neuron; second, changes in the protoplasmic glia cells; third, changes involving the cortical and pial vessels, also the vessels at the base of the brain; fourth, multiple areas of softening in the ascending parietal region; fifth, myelin degeneration.

DISCUSSION.

DR. HENRY J. BERKLEY: I think Drs. Mills and Schively are to be congratulated in presenting to the Society this extremely interesting case. There is only one point I would like to have brought out and that is whether there were any normal brain cells shown in their entirety by the stains. The photographs do not show them.

DR. SCHIVELY: Quite a number of normal cells showed particularly well in the occipital region.

DR. ADOLF MEYER: I would like to ask one question in regard to the clinical diagnosis of the case, whether Dr. Mills and Dr. Schively are inclined to think it is a case to be brought into the group of senile dementia, or what form of progressive dementia is especially alluded to. I may not have heard their statement.

DR. MILLS: As stated in the brief clinical history this patient presented some peculiarities during all her life. She had had chorea, and probably also had an attack of acute mania connected with the puerperal state. Her symptoms during the past two or three years and at the time I saw her were like those of premature senile decadence and did not accord fully with those of any particular type of insanity. The title given in the paper is simply one of convenience. She began to have amnesia for names some years before her death. One particular point that makes the case of special interest is that it was one in which I gave testimony before a commission in lunacy. It represents a class of cases in which we are frequently called upon to give such testimony. Within as many months I have testified before commissions in two other somewhat similar cases.

SOME OBSERVATIONS ON THE USE OF HYOSCINE.

By FRANK C. HOYT, M. D.,
Superintendent Iowa Hospital for the Insane, Clarinda, Ia.

I wish to briefly direct your attention to some clinical observations, made during the treatment of numerous cases of insanity, in which the exhibition of hyoscine was attended by untoward symptoms. As all of the cases were so similar in type and the symptoms so nearly identical, I will not encroach upon your time by reporting the cases in detail, but will treat of them in a general way. The drug has been used as a hypnotic, more especially in cases of acute mania, alcoholic mania, the periodical excitement of chronic mania, general paresis, and in the intense excitement of grave delirium. Because of its minute dose, its tastelessness and its prompt action, it has seemed peculiarly well adapted for use in these forms of mental excitement and it has, perhaps, been used more freely for these reasons. Unfortunately in a considerable proportion of cases when this drug has been given in the very moderate dose of one one-hundredth of a grain it has been found to produce in a rapid manner a serious embarrassment of respiration and well defined cases of pulmonary oedema. In those cases in which the drug acted unpleasantly there was no rigor and only a rise of temperature of from one to two degrees. Auscultation revealed abundant moist and bubbling rales, heard chiefly with inspiration. The anterior aspect of the thorax was usually hyper-resonant, while the lateral and posterior aspects were dull on percussion. The patient, after having been actively excited mentally, and extremely restless, in a few minutes' time was observed to have undergone a marked change. The motor restlessness had disappeared, while the cerebral excitement was manifested by a wild delirium, with paucity of ideas, a lack of emotional features and a tendency to tear the clothing from the chest; dyspnoea with cyanosis supervened and the respiratory

movements were thoracic in character. There was almost invariably present a profuse expectoration of serum and the accumulation of serous matter in the bronchi and trachea was so rapid that the patient could not expel it.

The heart's action was, as a rule, unimpaired in the early stage, and was at all times out of proportion to the respiratory embarrassment. In this respect, this condition differs widely from the pulmonary oedema and accompanying heart failure which occasionally attends the crisis in pneumonia.

The cases in which these serious symptoms occurred were usually promptly relieved by heroic doses of nitrate of strychnia and general stimulation. While these cases are not necessarily fatal, yet they are always distressing and grave in character, and prompt us to make a careful examination into the character of the drug and the physical causes which may be contributory in the production of the sudden onset of pulmonary oedema.

Hyoscine is an alkaloid derived from *hyoscyamus niger* and is given in doses varying from one one-hundredth to one-fiftieth of a grain. It is regarded by text-books generally as being especially valuable as a hypnotic "to allay excitement and produce sleep in acute and recurrent mania" (Biddle).

Hare does not write of it so favorably and calls attention to its depressing effects on respiration. He asserts also that "it first stimulates the vagus nerves and finally paralyzes them." He regards it as especially valuable as a hypnotic "in cases of acute mania, alcoholic mania, hysteria, etc.," giving it in doses of one one-hundredth of a grain hypodermically.

Pulmonary oedema or the exudation of serum into the alveoli of the lungs occurs when there is some great resistance to the blood stream in the aorta or some of its principal branches; when the pulmonary veins are occluded; and when the left ventricle, owing to some serious injury, ceases to act properly, while the right ventricle continues to contract, thus producing a rapid congestion of the pulmonary capillaries with a consequent exudation of serum. This latter condition is the one which usually obtains in *articulo mortis*.

It is frequently associated with the pulmonary hyperæmia which is caused by incompetency of the mitral valve; often accompanies the general anasarca of Bright's disease and is occasionally a consequence of anæmia.

However, in the class of cases under consideration, these conditions were generally absent. It would seem, therefore, that there must be some direct association between the physiological action of the drug and the condition of the nerve centres in these forms of insanity. The explanation may be found in the tendency of hyoscine to paralyze the vagus, thus causing slow and difficult respiration which would cause the lungs to become surcharged with blood, the exudation of the serum and the œdema, being the natural result of this condition.

I believe, however, that in these cases of acute excitement the condition may be materially aided if not produced alone by vaso-motor changes. The anæmia of the vaso-motor centre which results in stimulation of that centre and a consequent contraction of the arterioles throughout the system, would so favor the stream of blood through the veins to the right heart that a rapidly forming œdema would result. This would better explain the untoward action of the drug in the class of cases in which pulmonary œdema seems most common.

Whatever the process, I am assured from my experience with the use of the drug, that it is not applicable in cases of acute mania, delirium grave and alcoholic mania and the cerebral excitement of general paresis, except in well selected cases, and then to be used with great caution.

DISCUSSION.

DR. H. A. GILMAN: I would like to ask Dr. Hoyt how he administers the drug usually, whether by hypodermic injection or by the stomach?

DR. HOYT: I use it in both ways, usually hypodermically. The preparations I have used are the hydrobromate and hydrochlorate of hyoscine made by well known manufacturers.

DR. DANIEL CLARK: I do not find hyoscine as satisfactory as hyoscyamine; in fact, I prefer the tincture of hyoscyamus to the active principle. My experience of drugs has been that the system tolerates the tincture of medicines made from the natural product much better than the active principle which is so fashionable nowadays. One or two drachms of this tincture given by the mouth is better than any of the two active principles mentioned above. If hyoscyamine is given we are not to forget that the crystallized form is not as strong as the amorphous

which does not have the water of crystallization. I used this medicine extensively years ago as a sedative in mania, but it did not give me much satisfaction; the after effects were not desirable.

DR. E. N. BRUSH: I have seen several preparations of hyoscine that were inert and others that acted in a very extraordinary and unusual way. I remember one patient who was brought into a hospital who had received one forty-eighth of a grain hypodermically, repeated in two hours, and again two hours later, without any apparent effect. The same patient had a comfortable night's sleep under one one-hundred-twentieth of a grain given by the mouth. I have a strong impression, and I have asked several people about it, that the tablets prepared for hypodermic use lose their efficiency after awhile. In all of the cases where it has had no effect these tablets were used. Where we have used Merck's amorphous salt, making our own solution, I have never seen any such results.

DR. C. R. WOODSON: We have used Merck's hyoscine; up to a few years ago that was the only preparation used in our hospital. The results have not been satisfactory. We all know that hyoscine has a paralyzing as well as hypnotic effect. I have on two or three occasions been told by sensible patients that the drug did not make them sleep, but that they could not move. Often the reason patients do not move and do not talk after its use is because they can not do so. Our experience has been so unsatisfactory with it that we have almost wholly discarded its use.

DR. W. W. GODDING: My experience has been somewhat similar to Dr. Hoyt's in using sub-cutaneously the hydrobromate; but we get alarming heart symptoms, congestion of the right side of the heart, and I have not thought it safe to use except in selected cases. Merck's amorphous hyoscine has not proved to the same extent so overpowering and apparently hazardous a remedy. We have used it with good results, but at the same time I am not fond of giving it in any of its preparations except in selected cases where the physical condition is such that you are rather glad to have some chemical restraint.

APHASIA, WITH REPORT OF CASE.

By ROBERT J. PRESTON, M. A., M. D.,
Superintendent Southwestern State Hospital, Marion, Va.

Aphasia is a "general designation for various forms of defect, manifested in the various modes of expression, just as anæmia is applied to various forms of deficiency of blood."

Precise knowledge of the effects of local disease on the various relations of language is uncertain. "The subject abounds in difficulty arising partly from its complexity and partly from the uncertainty due to the deficiency of fact and the obscurity produced by a redundancy of theory." (Gowers.)

Speech centres are located in the left hemisphere of the brain in right-handed persons, but in the right hemisphere in left-handed persons.

The brain structure, however, is similar in each hemisphere, and loss of function in the left hemisphere may be more or less compensated for after a time by the right hemisphere.

Speech processes in the cortex of the brain are sensory and motor. By the former language is received, by the latter it is uttered. Hence aphasia is chiefly either motor aphasia or sensory aphasia.

Motor aphasia is caused by a lesion in the posterior part of the left third inferior frontal convolution and the adjacent part of the ascending frontal convolution. Destruction of this motor speech region causes total or almost total loss of voluntary speech.

As before said, compensatory use of the same structures in the right hemisphere may occur after a time. Motor aphasia may be produced by disease of the conducting path from the cortex as well as by disease of the cortex itself.

Sensory aphasia is caused by a lesion in the posterior half of the left temporal convolution (auditory centre) and in the lower and hinder part of the parietal lobe (visual centre), as the sensory relations of speech are with hearing and sight.

Sensory aphasia, or word-deafness, always causes considerable derangement of speech, sometimes as much formal disorder or ataxy of speech as in motor aphasia.

In sensory aphasia, or word-deafness, the patient is unaware of his errors, while in motor aphasia the patient at once recognizes his mistakes and is annoyed by them.

In addition to the above leading varieties of aphasia, the motor and sensory, there is another in which the patient, without loss of the motor processes and without word-deafness, has a difficulty in recalling words and uses wrong words; this has been termed amnesic aphasia, or loss of memory for words, produced, it is supposed, by an interruption of the path between the motor and sensory centres, by disease of the island of Reil.

Visual aphasia is the defect that accompanies word-blindness. Total aphasia is the form in which both auditory and motor centres are destroyed and all use of words is lost.

Persistent aphasia may be produced by any kind of lesion affecting the speech centres, but acute softening of the brain is said to be the most common cause; other causes are hemorrhage, embolism, tumors, chronic senile softening, etc.

Obstruction of the middle meningeal artery (which results in softening) is also said to be the most frequent cause of aphasia. This artery supplies the speech centres.

Motor aphasia is produced by softening due to obstruction of the first branch of the middle meningeal artery, sensory aphasia by that of the fourth branch.

The motor centres situated in the central frontal convolutions are chiefly supplied by the second branch; hence hemiplegia is often associated with aphasia.

Acquired syphilis is a very common cause of acute softening of the brain occurring in adult life. About half the cases of acute softening occur between thirty and forty years of age.

In the light of the above facts collated and condensed chiefly from the best authorities at hand, a report of the following case may prove of some interest:

Case.—G. S. aet. 38, was admitted to the Southwestern Virginia Hospital, December 30, 1895, suffering from partial hemiplegia affecting the right side of the body and accompanied by considerable mental disturbance and marked motor aphasia.

The depositions in his case state that he is married, has no children, occupation that of clerk and statistician, has done some clerical work in the N. W. R. R. offices. The first indications of insanity appeared June 3d, 1895, after a debauch in the city of Knoxville during which, from an imperfect history, he is said to have received a blow on the head from a policeman's club and a fall on the curbstone, striking his head. He was said to have been unconscious for some time. The symptoms of insanity following were, feebleness of mind, inability to express himself in words that could be understood, disposition to be headstrong on business subjects, threats to kill his relatives attending him. There was constitutional weakness; symptoms appear to increase. His parents and grandparents were not related before marriage. No heredity. Supposed cause stated was that it followed a stroke of paralysis; he has had eruptions thought to be due to venereal disease; has been on alterative and tonic treatment.

On admission to the hospital his bodily condition was fair; general health fairly good, partial hemiplegia affecting the right side of body—almost complete in right arm, not so much in right leg. He walks with a hesitating, tottering gait; has marked motor aphasia; sight unimpaired but hearing slightly impaired on both sides, more so on right; bodily organs for the most part in healthy working order; has urethral stricture which yields readily to treatment; patella and other reflexes on right side exaggerated; there is a scar two inches long on left side of head and some unevenness of the bone over the left inferior frontal convolutions. There is no paralysis of the muscles of lips, tongue, or glottis. He was placed upon specific treatment (iodide potash and bichlor. mercury with tincture cinchona) and good nourishing diet. Under this treatment, alternated at times with tonics and electricity to affected limbs, some improvement was manifested during the spring and summer months of 1896, both mentally and physically. His aphasia was somewhat lessened; connects sentences better; is more easily understood. He walks out daily on the hospital grounds when weather is favorable. Still he has great difficulty of speech, a retention of speech, or at least utterance of words with more or less error; seems to understand what he wants to say and quickly catches the word or name when suggested to him. He can write some with left hand. This he has acquired since injury. Right hand

too much paralyzed for use. When annoyed for words his recurring utterances are curious, his usual expression when annoyed for want of a name for a person or thing, being "Buddie, Buddie."

There is no word-deafness or word-blindness distinctly manifested in this case, though much confusion and formal disorder of speech exist, which seem to be not so much from loss of memory for words as an inability to express them, and the case has been diagnosed as one of motor aphasia, the lesion or disease supposed to be in the left third frontal convolution and adjacent structures.

Dr. Henry M. Hurd, superintendent of Johns Hopkins Hospital, saw this case in January, 1897, and suggested trephining as a tentative measure, but thought the operation not apt to do much good as the symptoms indicated destruction of brain tissue. (From the spastic condition, or possibly structural contractures, of muscles of right arm, etc.)

Interesting inquiries in this case are, first, how far this trouble may be due to the injury, with some probable depression of bone accompanying, and second, how much is due to the syphilitic trouble.

Coming on so soon after the injury to the head points strongly to the former view, but other features of the case with the slight improvement resulting from specific treatment (if it be not from compensatory action of right hemisphere) point to the latter view.

Another interesting inquiry is, will the compensatory action of the right hemisphere continue? If so, how far and how long?

The trephining has been delayed only on account of lack of co-operation on part of friends, but is still under consideration.

HOSPITAL RECORDS.

By R. L. PARSONS, M. D.,
Greensmount, N. Y.

Previous to the first day of January of the year 1859, no systematic record of the physical and mental history of patients treated at the New York City Lunatic Asylum had ever been kept. Save, possibly, in a few exceptional cases, the most that had been done had been to record the names of patients, what might be termed their pedigree, a few words about their physical and mental condition at the time of their admission, and a few other points which were, for the most part, statistical rather than medical in character. Indeed, the book in which this record was kept was entitled a register, one folio of which contained this sort of history for twelve patients, the space devoted to each being one inch by thirty-six in extent. And no provision was made for an extension of these records. At that time, with the exception of the McLean Asylum, it is believed that the method, or rather lack of method, of recording the histories of patients at the few asylums for the insane then in this country, did not essentially differ from that in use at the New York City Asylum.

On the day above mentioned, books were opened at the New York City Lunatic Asylum for the systematic, extended and permanent histories of patients; at first comprising only the most important and recent cases, but soon extended so as to include every inmate of the asylum, and these records have been systematically continued from that date until the present time, under all changes of administration and of name.

At about the same time, the other American asylums for the insane, as they were then designated, began to keep a systematic record of the histories of all their patients, and these too have been continued, with such improvements in method, from time to time, as have been suggested by the experience, the learning and the ingenuity of the medical officers in charge. It may

safely be assumed that some of these methods are better than others, and so that a careful reconsideration and discussion of the methods of making and keeping a record of histories will be of value to, at least, some of the members of the American Medico-Psychological Association.

The subject may be conveniently considered under three categories; first, what the medical records should comprise; second, what and what sort of books and other incidental means are required; and third, how the routine of the method or methods may best be carried into practice.

Of the great importance of reasonably full and well kept histories there can now be no question. The theory and practice of medicine in mental diseases, perhaps the broadest and most inclusive of the specialties in medicine, involves a knowledge of all the facts that can be ascertained regarding the heredity of the patient, congenital influences, normal mental conditions, mental peculiarities and idiosyncrasies, former physical diseases and accidents, mental changes previous to admission, physical condition at date of admission, all important changes in mental or physical condition that take place while under treatment, and a record of treatment and results. All this is too much and too important to be entrusted to the memory of any one physician. One physician may not have the entire management of the case; and then, the record may be of general use as a basis for further study. Furthermore, a systematic record serves to show what has been done for and what has happened to the patient, in case any question should arise regarding his care and treatment. The hospital records, then, should comprise all the important points that can be ascertained regarding the past history of the patient, and also a faithful record of his mental and physical condition and treatment while under hospital care.

At the time of admission a critical examination of the mental condition of the patient should be made and recorded, in addition to such points as are noted in the admission papers and such facts as are learned from the friends and acquaintances of the patients. At the same time, or as soon thereafter as the condition of the patient may admit, a careful physical examination should be made and the findings duly recorded; and this should not be a merely perfunctory examination, but such a one as will serve to elicit the facts, in case any marked abnormality exists. Even if

a systematic examination should require the expenditure of much time and energy, this would be no valid reason for its omission. But in the majority of cases, the examination would not involve a very great expenditure of time. If an organ or function, as the lungs or the heart, for instance, is in a sound condition this fact is very readily ascertained. But, on the contrary, if an organ is evidently diseased, or even if its condition is doubtful, a thorough examination is imperatively demanded, whether the time required be great or little. The examination of the body for diseases of the skin, for injuries and for fractures may be conveniently made by the physician while the patient is being bathed. If, however, there be no woman physician on the hospital staff, a skilled nurse may make the examination, reporting the result to the physician in charge for such further action as he may find advisable. A gynaecological examination, however, will usually be unadvisable, unless, or until some positive reason appears for such examination. The quantity of urine passed in the twenty-four hours should be measured, or at least estimated as nearly as possible, and a qualitative examination should be made of the specific gravity, color, sediments, for sugar and albumen, and a more exhaustive examination should be subsequently made in case of apparent need. The state of the appetite and digestion should be duly noted and recorded. The condition of the bowels should be at once ascertained, lest obstinate constipation, impaction of feces, or auto-infection from these causes should escape attention. A microscopic examination of the blood and of the urine will sometimes be found of immediate service. It is advisable that these examinations be fully made and recorded as a matter of routine, since the record would establish a standard of comparison for future reference, even if it had no bearing on the immediate treatment of the patient.

Subsequent to admission, a daily record of the condition and treatment of the patient should be made for, at least, a short period of time, as for one or two weeks, and even in chronic cases, in which the mental and physical condition seem to be stationary, a re-examination and a record should be made at stated intervals of from three to six months. A systematic re-examination will serve to guard against the overlooking of incipient phthisis, or of some other insidious bodily ailment, or of

changes in the mental condition which, although slight, may be of importance. And then, the record will serve to show that the condition of the patient has not been overlooked. The current record should comprise a concise statement of every important change in the mental or physical condition of the patient while in the hospital, together with a record of his medical treatment, including every prescription of medicine, regimen, occupation, medical baths, massage, etc., in order that the record may be complete.

In order to procure a proper keeping of the records it is important that the books or other means be well adapted and well arranged for the purpose. There are two systems for hospital records that are worthy of special consideration, one in which bound books containing consecutive records of many cases are used, and another in which the history of each case, together with such correspondence as may be thought worthy of preservation, is kept by itself on folios, in a separate cover, or envelope. Each of these systems has its advantages and its disadvantages. The especial points in favor of bound books are that they are more official in form, are less likely to be misplaced, injured or lost, and that they are more convenient for the making of short entries, such as are often made in large hospitals. Their special disadvantages are their lack of adaptability to the record of histories of different lengths, and that a comparison of similar cases is rendered difficult since they are scattered in different places and oftentimes in different books. The especial advantages of the separate system are that it is better adapted to the record of histories of different lengths, since as many folios may be added as may be required, and no more; that the whole history and all that relates to it is all in one place; that in case of readmissions, the continued history may be conveniently added to the old; that each history is convenient for examination by itself; that it renders the comparison and study of similar cases from the records convenient; that such written reports of nurses as may be required may be kept in the cover, as part of the medical history; that the entries may be type-written, if so desired, thus securing a degree of legibility that renders a review of the history much easier than when it is written with a pen; and that completed histories may be filed away, so as not to be an encumbrance to the current records.

Under the separate system, sermon paper, or letter paper, in folio, will be found of convenient size. If preferred, the paper may be divided into single sheets. Each page should be numbered and the number of the case should also be written at the top of each page. This renders the rearrangement of the pages, or of the cases easy, in case they should become disarranged. Each case should also have its separate cover or envelope of strong manila paper, and the number of the case should be plainly written at the top of the cover. It is also convenient to have the name of the patient, with the date of his admission and discharge, written on the outside of the cover. Whenever a patient has been discharged, his medical history is to be at once filed away, in numerical order, so as not to encumber the records that are in current use. These completed histories may be conveniently stored, either in pamphlet cases of suitable size, so labelled as to designate the numbers of the histories contained; in drawers, or in boxes of suitable size, constructed with an open top, three rigid sides and a hinged side at the back so constructed that it can be fastened in an upright position, or pushed backwards through an arc of say twenty or thirty degrees. This last arrangement makes it easy to inspect the numbers on the cover.

It may be found that the aggregate system is better adapted for use in large hospitals, while the separate system is better adapted for use in hospitals of limited capacity, or those in which each physician has charge of a limited number of patients. There is little question that the separate system is much the better adapted for use in small private hospitals and also in private practice. In private practice this system has the additional advantage that it enables the physician to take his notes to the bedside of his patient, if he so desires.

At this point the suggestion may be ventured of a modification which, if feasible, might combine some of the advantages of both the systems already mentioned. The manufacturers of photograph albums make covers so arranged that any, or all the photographs may be removed at will, with considerable range of capacity. If similar covers could be devised, suitable for hospital records, current cases only might be kept in one, or a few of the covers, in alphabetical order, while the histories of patients who had been discharged might be placed in other covers,

in numerical order, and stored away. This would render it easy to give each history as much space as may be required, and no more; while the current records would contain the histories of such patients only as were under care at the time.

Another modification of the system of bound records, deserving of notice, has been in use at the Utica State Hospital, in which stubs were bound after the leaves intended for each history. In case additional space is required for any history, leaves are pasted on these stubs, or letters may be attached to them, if so desired. This method provides a fairly efficient means for keeping each history by itself, but requires the daily use of more separate books, even, than the ordinary method of bound books and transfers.

Under either the aggregate or separate system, there should be a printed form on the admission pages of the record, having reference to all the points that demand attention on the admission of the patient, as follows, for instance:

THE FORM.

Wh. No.	Cer. No.	Year No.
Name,....Admitted,....Accompanied by,....Cer. by,....and,....Approved by,....Correspondents.....		
A. Nativity,....of Father,....of Mother,.....Age,....Height,....Weight, ...Eyes. ...Hair,... Temperament,....Civil Condition,....Occupation,....Oc. of Father,....Oc. of Husband,.... Education,.... Religion,.... In U. S.,....In this State,....In this County,....No. of Ad.,....No. of Attack,....Age at 1st Attack,....		
B. General Health,....Phys. Con.,....Temperature,....Skin,....Glands,....Bones,....Injuries,....Nervous System,....Sensation,....Reflexes,....Pupils,....Articulation,....Movement,....Sight,....Hearing,....Sleep,....Tongue,....Breath,....Appetite,....Digestion,....Bowels,....Urine,....Menstruation,....Reproductive Or.,....Lungs,....Heart,....Pulse,....Capillary Cir.,....Other Organs or Diseases,....		
C. Former Diseases or Injuries,....No. of Births,....Date of Last,....No. of Miscarriages,....Date of Last,....		
D. Appearance and Manner,....Actions,....Habits,....Propensities,....Language,....		
E. Normal Mind, Intellect,....Emotions,....Will,....Peculiarities,....Paternal Heredity,....Maternal Heredity,....Congenital Causes,....Predisposing,....Exciting, ...Cause of 1st Attack,....Cause of Present Attack,....		
G. Diagnosis,... Prognosis,....Result,....		

The above are taken from my own records, but may be varied so as to conform to any other views or requirements. The ad-

vantages of such printed forms are that they call attention to all the points, so that none of them are liable to be overlooked through inadvertence; and that it renders the finding of a given item easy, since it occupies a fixed position in each history.

If the aggregate system be adopted it will probably be found of advantage to have books for the record of histories of two sorts; the one entitled "Admission Records and Compendium," in which are to be entered the notes referring to the past history of the patient and to his condition at the time of admission, and also a condensed history of the patient while under treatment, when the case is finally closed; and the other a blank book without printing entitled, "Continued Record of Histories," for all current entries not immediately connected with the patient's admission. This method would serve to render the completed history of the case more readable and so of greater interest; while it would serve somewhat to obviate the necessity of frequent transfers of the history, since there would be no intermediate printed matter to interfere with the assigning of suitable space for histories that seemed likely to be prolonged.

Whether the aggregate or the separate system be adopted, there should be a separate, general index, sufficiently comprehensive to contain the names of the admissions for a long period of time; and the index should be so arranged and lettered that any name can be found as readily as in a directory containing a like number of names. A card index might be preferred by some, although it is probable that a well arranged index, in book form, would be found most convenient.

If the aggregate system be adopted there should also be a temporary index for daily use, containing only the names of patients who are in the hospital and of those who have been recently admitted. As soon as this temporary index contains a considerable number of names of patients who are no longer in the hospital, a new one should be made to take its place, omitting the names of patients who have been discharged.

Under the separate system the temporary index is not required, since the record of patients under treatment may be filed in alphabetical order so as really to be an index of themselves.

Since every prescription of medicine, as well as every other important order or remark regarding a patient, should be at once recorded in the current history of the patient, there can be no

need of a separate record of prescriptions. Such a record may be considered as even worse than useless. It is obstructive, inasmuch as its employment has a tendency to take the place of the proper entry in the history records. If a prescription is made comprising several doses of medicine, the druggist has only to make up the prescription as ordered and dispense the medicine until the prescription has been exhausted or contermanded. Or, if the prescription is from a common stock the druggist may copy it in a book, or still better, on a suitable card, for his own guidance.

The only other books required in connection with the medical records, aside from the ordinary records of admissions, discharges and deaths, are those in which the prescriptions and notes are entered on the occasion of the daily visits. These should be of convenient size and should be considered and treated as original records, to be properly labelled and filed away after they are filled, their contents having been duly copied in the proper record for each patient. There should be one of these books in each ward, in order that the nurses may be able to refer to the written directions of the physicians, that the book may be at hand on the occasion of any other visit the physician may make, and for other reasons that will appear later on. The entries in the ward book may be made in pencil, although it would be better if they were made with a stylographic or fountain pen.

At this point it may be of interest to refer to another convenient use of the ward book, not immediately connected with the personal history of patients; that is, the head nurse may be required to enter certain statistical points, on the morning of each day; as, the number of patients in the ward on the morning of the previous day; the number admitted; the number discharged; the number remaining; the number in bed; the number who were at work on the previous day; or such points as might be considered worthy of daily record, to be summed up and entered in a book provided for the purpose.

The routine of the methods of making or keeping the records will naturally differ in detail in different institutions, in accordance with the amount of work each medical officer has to do, with local needs, and with the teaching of experience. But it may fairly be assumed that the general methods above indicated may, with slight modifications in detail, be adapted to all insti-

tutions, whether large or small. But, inasmuch as the difficulties are greatest in large institutions in which the time and energies of the medical officers are most severely taxed, the routine to be followed in these may best serve as a standard, to which modifications may be made in smaller institutions, as may be found advisable.

In large institutions, then, in which there are several medical officers, each of whom has a considerable number of patients under his immediate care, and in which the medical work is expected to be thoroughly done, there are weighty reasons why the engrossing of the medical histories of patients should be done by an engrossing clerk who writes a legible handwriting and who should also be a good stenographer and type-writer, for such other duty as may be required, or for the type-writing of the records, in case the separate system should be adopted. The chirography of excellent physicians is oftentimes miserably poor; and then, the greater the amount of time the physician needs to spend in the copying of his own records the less time and energy can he devote to his distinctive duties as physician. Moreover, if bound books are used for the recording of histories, the physicians will often interfere with each other, if they make the entries themselves. Under the separate system, however, the danger of interference may be avoided if each physician takes the histories of the patients under his care into his own immediate charge. And so, too, the danger of interference will be diminished, by having separate indexes and separate records for the sexes.

The daily routine, then, under the circumstances mentioned, would be as follows: On making his morning visit, or any other visit, the physician finds the ward book in the ward in readiness for any entry he wishes to make. As soon as the visit to this particular ward is finished, the book is at once taken to the drug-gery. The druggist puts up all the prescriptions that have been made and then sends the ward book to the record room, which, for convenience, should be near the drug-gery, and also contiguous to the office of the physician in charge. The engrossing clerk, with the aid of the temporary index, writes after the name of each patient found in the ward book the number of the record and of the page on which the history, or its continuation, is to be found. He then carefully copies the entries that have been

made in due order and the ward book is then returned to the ward to which it belongs. This routine is repeated for each ward and for each physician in due order.

The whole process thus carried out, is very simple and convenient, does not involve points of interference, and relieves the physician of the disagreeable process of copying the entries he has made in the ward book.

But, whether the aggregate or the separate system be in use, it is evident that the routine may be changed from that above suggested so as to meet varying circumstances or views, without any essential change in the system itself; as when clinical assistants are employed, or when the services of an engrossing clerk are dispensed with.

The design of the suggestions that have been made regarding hospital records is rather a statement of general principles and a suggestion of various means and methods from which to choose, with such modification as may be thought desirable and in accordance with varying needs, than the recommendation of any fixed and unvarying mode.

THE MEDICAL AND MATERIAL ASPECTS OF INDUSTRIAL EMPLOYMENT FOR THE INSANE.

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Carlyle says somewhere, "There is always hope in the man who actually and earnestly works. In idleness alone there is perpetual despair." True as this is of all men, it is especially true of the insane, idleness among them being oftentimes a symptom of their malady that calls for active treatment by active work. Nothing new in this doctrine, say the quidnuncs, and they are right. It has been preached for generations and in some institutions preaching and practice go hand in hand as blessed means of saving multitudes of insane men and women from chronic insanity or of making the chronic lunatic a contented, peaceful, useful member of society, despite his detention. But I am convinced that much remains to be done everywhere to secure for occupation the eminent place to which it is entitled in practical therapy. It is human nature, especially among physicians, to think and speak slightly of simple, plain, everyday curative agencies and to exaggerate the healing virtue of the unknown quantity. With respect to drugs, while we doubtless understand their action better than our forbears and realize that in their relation to the *corpus vile* they are, like everything else in this world, subject to law, we often exhibit a childlike faith that suggests the mysticism of the middle ages. Our mail brings day by day a new claimant for recognition fresh from the press of the wholesale drug house, and latterly even the transatlantic pharmacist, not backward in his appreciation of our craving for things European, thrusts his foreign envelope under our noses to call our eager attention to some new remedy of strange name. So we go on experimenting with this drug and with that, year in and year out, groping, vaunting, doubting, spurning, each by turn, till finally we sometimes lose faith in the

permanent value of any drug, and run the risk of ultimate entrance upon the stage of therapeutic nihilism. Thus it happened, not long ago, that when a member of this Association assumed charge of a high-class private hospital, the only drug which he could find in the dispensary was that much advertized remedy whence "gladness comes." By all means let the careful, patient, scientific experimentation go on, but let us give to that much abused word "scientific" a wider range of meaning, regarding science as that limitless field of mental activity which is concerned in the deducing of general laws or principles from observation of phenomena; truth or knowledge, of whatsoever kind, ascertained by observation, experiment and induction. In other words, let us not for a moment allow ourselves to think that "bottle medicine," to which the layman pins his faith, is scientific treatment for the insane, while work as a curative agency is not. The contention of this paper is that as compared with drug treatment, so far as the great mass of any asylum population is concerned, that by occupation, properly systematized and diversified, is of immeasurably greater consequence. And, inasmuch as the drugs chiefly prescribed in hospitals for the insane are narcotic, I will go further and assert that these latter probably do in the long run more harm than good. But let us insist that work is treatment and not entertain the belief, born of centuries of foolish tradition, that because we are not putting nauseous drugs into our patient's stomach we are not doing him or his friends full justice. To the question, "Is he taking any medicine, doctor?" let the answer come boldly, when necessary, in much the same emphatic manner as a few years ago a certain railroad magnate expressed himself in New York with reference to the public.

If there must be a philosophical, that is "scientific" reason for our attitude on this question and it seem necessary to talk learnedly of brain cells to secure recognition for employment, one may call attention to the grounds upon which the modern pedagogue approves manual training as an integral and important part of education and, *mutatis mutandis*, point the obvious moral. Let it be remembered that the motor area in the brain for the arm and hand is vastly larger than that controlling any other portion of the body of equal size except the face, showing that it requires a vast number of cells to effect the fine adjustments

and delicate coordinations of the muscles of the hand in its infinite variety of movements; that nerve cells, motor as well as sensory, grow and develop like any other part of the body through nutrition and functional activity and that exercise, properly regulated, is essential to their healthfulness. We sometimes lose sight of the fact, although it lies on the surface of cerebral physiology, that voluntary muscular movements have the effect not only of exercising the muscles involved, but also of calling into activity the motor cells which control them; that these motor cells are made to act and develop only by means of the muscles; and that, therefore, exercise is indispensable to the proper development of the motor area of the brain.†

Indeed so great an authority as Crichton-Browne reminds us that "in persons who have been long bed-ridden by chronic disease, and debarred from all muscular exercise, the whole motor area of the brain is, after death, more or less atrophied and waterlogged. It is unquestionably essential to the welfare of all motor centres, and especially of the large and complicated motor centres of the hand, that the parts with which they are immediately connected should be used in an active and varied manner."‡ And as showing the important part played by these motor cells in brain nutrition, the observation is in point that the amputation of an arm or a leg during childhood is vastly more detrimental to the corresponding brain centre than a like sacrifice of limb in the adult. In his charming essay on "An Apology for Idlers," Robert Louis Stevenson insists that "extreme busyness, whether at school or college, kirk or market, is a symptom of deficient vitality; and a faculty for idleness implies a catholic appetite and a strong sense of personal identity." All very well this as a special plea and as a special club with which to attack that "sort of dead-alive, hackneyed people who are scarcely conscious of living except in the exercise of some conventional occupation." But it does not affect the proposition that physical energy means a good motor brain area, and conversely, that physical laziness implies defect there. Moreover, your average patient in an asylum has neither catholic appetite nor strong sense of personal identity and cannot, therefore, give himself over to random provocations. "It is no good speaking to such folk; they cannot

† See Manual Training. An address delivered before the Massachusetts Teachers' Association at Worcester, Mass., Nov. 30, 1896, by Thomas M. Balliet.

‡ Handcraft, By J. Crichton-Browne. Educational Monographs, Vol. III., No. 5.

be idle, their nature is not generous enough," says Stevenson, "and they pass those hours in a sort of coma, which are not dedicated to furious moiling in the gold-mill." The argument for the continuous employment of the insane could not have been more happily stated by an experienced alienist who had witnessed in his wards the baneful effects of idleness and noted the blessed change wrought by active employment in insane folk whose nature was not generous enough for idleness. It was the recent experience of Nansen in the management of his crew of brave sailors in Arctic seas, and so it must ever have been and will ever be.

I began my paper by disclaiming novelty for my theme. Such disclamation especially befits the successor of Amariah Brigham, the first superintendent of the Utica State Hospital, who, in his first annual report, that for the year 1843, showed a wonderful foresight and a masterful grasp of the conditions that confronted him in his pioneer work for the insane of New York. Hear his words: "That many of the insane are benefited by labor, especially in the open air, is unquestionable. * * * The number able to labor will vary in different institutions. In some, especially in those that have been long established, are many old and incurable cases that are made much happier by daily labor. In such institutions these may be classified and taught trades, and do much towards supporting themselves. I hope the time will speedily come when, in every State, good asylums will be provided for this class of patients and for all the insane. I am clearly of the opinion that, with a good farm connected with such asylums, and the judicious arrangement and management of shops, one-half of the incurably insane of our country would perform sufficient labor to support themselves and would be happier and more healthy for the exercise. Incurable cases, instead of being immured in jails and in the town and county poor-houses without employment, where they are continually losing mind and becoming worse, should be placed in good asylums and have employment on the farm or in the shops. In this way they would, in general, be rendered much happier and some would probably recover."

Nothing could illustrate more fitly the genius of Brigham as a pioneer in asylum management in New York than this passage from his first report, neither could anything silence more effect-

ually the claims of those who would arrogate to themselves priority in the discovery of the promise and potency of work as a means of treating the insane. Not that Brigham was himself the first to lodge a caveat; indeed, it were a hopeless task to enquire who among observing healers of the mind first learned the lesson taught by Ecclesiastes, the preacher, that "by much slothfulness the building decayeth and through idleness of the hands the house droppeth through." What boots the inquiry? Suffice it that to-day there is on this subject universal agreement.

It were an easy task, though to you tedious in the recital, to give case after case of patients who have been helped on the road to recovery from the moment of entering the fields or the workshops and being placed in surroundings that approximate the conditions of the same extramural existence. That is not the purpose of this paper. All I care to do is to call renewed attention to an old subject and, it may be, to suggest the teachings of a personal experience. While at the Utica State Hospital, from the earliest days of Dr. Brigham's administration over fifty years ago, field and shop work seem to have been recognized and put into practice; for some reason the latter had been allowed to fall into desuetude. There is no evidence that, until within recent years, shop work had at any time played an important part in the institution. There was a whittling-shop, so-called, and a few patients worked in the general shops of the asylum as is done everywhere. Printing was also carried on in a small way. But, ten or eleven years ago, there was no general workshop for patients in which large numbers of men were systematically employed. This feature of the place has been a thing of comparatively late growth and evolution, till now, if Utica can claim a *genius loci* at all, something that distinguishes, pervades and dominates, it is its industrial shops. My desire and hope is that the presentation of this paper may have the effect of inducing more superintendents to go and do likewise and thus by removing this sign of particularity (which, as we know, is not generally considered that of sanity), bring each institution within the pale of accepted and conventional practice. Work was begun in a small way by engaging an upholsterer, whose success as a jack-of-all-trades had been already demonstrated at the Morris Plains Asylum, New Jersey. Later a like draft was made upon the Rockwood Asylum, at Kingston, Ont., where shop work was

being successfully practiced, especially in brush making. It was a modest beginning, but such was the immediate success of the brush and mat-making and general upholstery work as a means of emptying the wards of restless or listless patients, that it soon became necessary to secure more space. Extension of buildings and enlargement of scope occurred *pari passu* till now the patients' manufacturing department occupies a building two stories high, two hundred and ten feet long and thirty-six feet wide. In this building there are employed, out of a population of four hundred and eighty-six men, an average of one hundred and twenty-seven patients. * Here follows an enumeration of the principal industries, together with the number of patients employed on April 21, 1897:

INDUSTRIES.	NO. PATIENTS EMP.
Making brushes and brooms.....	21
“ mats.....	5
“ stockings.....	10
“ combs and buttons.....	13
“ shoes.....	4
Upholstering.....	57
Printing, ruling and binding.....	17
Total.....	127

It will occur to this audience that so large a number of patients employed day by day in industrial pursuits would soon produce a surplus of wares if consumption were confined to one institution, and the intelligent and cautious inquirer may desire to know whether we have the temerity to brave the united forces of Labor, writ large, and recklessly to invite the attention and displeasure of that modern knight-errant, the walking delegate, in his espousal and valiant championship of the cause of *honest* as against institutional toil. The answer is that we evade that ubiquitous crusader and dodge his issue by keeping without the open market and offering our products only to our sister hospitals for the insane in the State system. This right is conserved to us by special statute, the Insanity Law of 1896 having specifically provided that “the State hospitals may manufacture such supplies and materials to be used in any of such hospitals as can be economically made therein.”

* This does not include patients employed in the tailoring department situated elsewhere, in which all its male patients' clothes are made as well as attendants' uniforms.

To the State Commission in Lunacy the hospitals of New York are indebted for a quick apprehension of the possibilities of co-operation along industrial lines. Application to extend the scope of manufacturing enterprises at Utica met with favorable action and other hospitals were encouraged in a willingness to avail themselves of our products. Thus one large plant, centrally situated, is made to subserve the needs of the entire system in the manufacture of certain articles of supply. Primarily the benefit to Utica is in the means of treatment, but incidentally there is a gain all round in the provision of well-made goods at the best possible prices. The total value of goods thus manufactured and sold, including printing and bookbinding, amounted during the year last past to about \$13,000. There were made 3,978 dozen hose valued at \$3,179; 545 dozen combs at \$409; 287 dozen brushes at \$684; 35 mats worth \$60; while from October, 1895, to October, 1896, the amount of printing and binding done aggregated in value the sum of \$8,363. The important fact to be borne in mind is that, given the building, the machinery and the opportunity, there is no institution which could not do likewise. That the enterprise pays in dollars and cents admits of no question, but what is much more to the point is the payment in mental results. To find occupation of any kind for one's able-bodied patients is always an accomplishment, but to empty one's wards of all but a few sick and feeble folk during the day is an *achievement* and one that is within reach of all who will earnestly make the industrial experiment. Therefore I would respectfully commend the practice of New York in the matter of co-operation as well worthy of attention. It is, after all, a phase of the higher socialism of which we hear so much nowadays, the essence of which is co-operation; while individualism has as its underlying principle competition. The aim of this kind of socialism is the fulfilment of service. Institutions by combining in any one State can make themselves independent, in a large measure, of the mercenary middleman by manufacturing numerous articles of supply such as I have enumerated. And I am convinced that the policy is susceptible of the widest extension. If one hospital makes a specialty of workshops, there is no reason why another, with a large farm, should not make an exchange of agricultural products, while a third might carry on a canning industry on a large scale. In institutions where it is

not convenient to make clothing, a specialty might be made of that department in some other institution in the State. So, too, with shoes, caps, and the multitudinous articles that are needed by the insane. The pecuniary advantage of such an arrangement alone, to say nothing of its inestimable value as treatment, ought to commend it as a wise measure of economy. The State hospitals of New York, centralized as they are in administration, lend themselves admirably to co-operative methods. No one can fairly question the beneficent results of effective combination and a doubting Thomas may be made to realize, by the patent facts of experience, that even a seat of State government may ultimately become, in one of its departments, a radiating focus of good will and wise management. The latest experiment along these lines is to be the erection of a plant at the Manhattan State Hospital * for the roasting of coffee and grinding of spices after purchase in bulk for all the hospitals. Think for a moment what this means in a service that requires some thirty-five thousand pounds of coffee per month. Presto: The middleman's profit vanishes to reappear in the cup in a form more acceptable to the patient consumer. So with spices. Under this proposed arrangement pepper will be pepper, nothing else, mustard will lose in yellowness while gaining in pungency, and both will be wholesome, for in nothing is there greater fraud than in this matter of condiments. In all States where the insane are maintained as the wards of the State under State supervision, there would appear to be no practical obstacle to such co-operation save the selfishness of existing purveyors, and each year the ingenuity of superintendents would suggest new departures. And by the way do not the beet sugar factories springing up nowadays suggest the cultivation of beets on some of our large hospital farms and their conversion into and exchange for the granulated product of the factory?

One sometimes hears of the great difficulty experienced in some institutions in inducing patients to employ themselves. It is a difficulty that soon vanishes under the competent direction of an experienced supervisor who is in hearty sympathy with the medical staff in this department of his work. Once let work be recognized as an essential of treatment, and *vires acquirit eundo*.

* Since this paper was written a coffee-roasting and spice-grinding plant has been erected at the Utica State Hospital in which it is proposed to roast all the coffee and grind all the spices used in the State hospitals.

Others again dwell upon the danger of having patients near rapidly revolving machinery and dread the risk of sharp-edged tools. It is the same argument that one used to hear with reference to the disuse of restraint, the use of which made the restraint necessary. The lazy or conservative attendant sees an *a priori* objection to free employment in the closer supervision that the freer life involves. But let him once perceive the improvement in his patient's condition, and he immediately becomes a convert to the new and humaner policy. Patients themselves are usually ready to escape from the ennui of their life in the wards and take naturally to work in the majority of cases, when they have experienced the new interests that occupation brings in its wake. The able-bodied patient sweats, and for him in return "the rich Arabia sweats her gums" in full reward for honest toil, the while the frankincense of hope and cheer displaces the gall and wormwood of a living death. "We grow weary when idle," said Boswell, to which Johnson replied: "That is, sir, because others being busy we want company." Even so with the insane. The opportunity to work being, therefore, a privilege and bringing its special blessing in health, it has never seemed to me worth while to adopt the elaborate scheme of compensation in vogue in some reformatories and in a few asylums, Broadmoor, for instance. Dr. Mercier * regards the absence of reward for labor as a crying evil, and has suggested the use of tokens or tallies which should be exchangeable at the asylum stores for such various commodities as are valued by patients. To do this would seem inconsistent with the theory of work as treatment, unless perhaps the insane, like children, are to be paid for taking their medicine like men. Rather, it seems to me, is *labor ipse voluptas*, and its *dulce lenimen* such recreation as is provided in all well-regulated hospitals for the insane. For, to conclude, although advocating the use of work to the fullest possible extent, consistent with health and safety, I would preach moderation in all things, saying, with Prince Henry: "I am not yet of Percy's mind, the Hotspur of the North, he that kills me some six or seven dozen Scots at a breakfast, washes his hands and says to his wife, 'Fie upon this quiet life! I want work.'"

* Lunatic Asylums; their Organization and Management. Charles Griffin & Co., Ltd., London, 1894.

INSANITY FOLLOWING SURGICAL OPERATIONS.

By RICHARD DEWEY, M. D.,
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The subject of the relation between insanity and surgical procedure is one of increasing interest and importance. It has been shown that in some cases surgery is capable of removing the cause of insanity in the brain or other organs and thus of curing the disease. But if surgery is capable of curing insanity it would appear that it is also capable of causing it, or of being a factor in its causation. At least a considerable number of cases has come to the attention of the profession where insanity followed operations and some of these were fairly attributable to the operation. Yet it must be remembered that insanity following an operation may or may not be a result of the operation, and a most careful discrimination is needed to decide the case as between the *post* and the *propter hoc*.

When insanity develops after an operation it is an open question whether the operation or any one of several other possible causes may have been the determining one, or whether all were working together in the production of the result observed. In estimating the ætiology we must reckon with the patient's constitution and heredity; we must know whether there was a lowered vitality, a toxæmia or any predisposing disease in kidney or other organs, or in the blood-vessels. We must also weigh the effect of the anæsthetic used and estimate the patient's mental state and the extent of the rôle which fear and anxiety and apprehension may have played in the evolution of mental disease. Further, the manner in which the healing process goes on and the presence or absence of any septic or toxic element in the wound must be considered. And among the latter must be taken into account the dressing used, as, for example, iodoform intoxication has more than once been recognized as a cause of delirium and bichloride and carbolic acid may also be toxic in their effects.

Some writers have attempted to establish a special form of post-operative insanity and to describe its clinical features, but it may be regarded as a question still *sub judice* whether the mental disease developed in such cases is a distinct species or whether it is determined in the same manner as in cases arising from other causes than surgical operations.

In order to arrive at a full understanding of such cases the following data are needed in each instance: (1) The age, sex, occupation, habits, residence, civil condition and nativity. (2) Any material facts relating to injuries or disease affecting the patient bodily or mentally *prior* to the operation, and the condition *at the time* of the operation. (3) The usual data of the operation; its nature and extent, the duration of the anæsthesia and of the operation, the kind of anæsthetic used and how it was borne. (4) The dressing used and the process of healing. (5) The length of time after the operation before mental symptoms appear and the form they assume. (6) The duration and outcome of the mental disease. (7) The hereditary tendencies, if any.

It is not my purpose now to discuss the various problems which I have hinted at above (indeed the data for such a discussion are yet lacking) but to present the clinical account of some cases which have been under my care or have been communicated to me by others; premising that such a clinical account is somewhat fragmentary and incomplete; however, if attention is drawn to this subject and complete records are secured in a large number of such cases, we may expect valuable additions to be made to our knowledge; and it is with this object that I venture to present this subject.

In order to show to what extent surgeons and physicians having the care of the insane have observed insanity after operations, I will quote some of the facts and opinions with which I have been favored. It will be noticed that there is great inequality in the reports furnished. In some instances not one case has been found in several thousand admissions to insane hospitals, in others, several cases of insanity have occurred among a few hundred cases of operations. It is impossible even to guess at a ratio either of the proportion of cases of post-operative insanity to the whole number of the insane or to the whole number of operations performed, or to the whole number of any one kind of operation. This is doubtless due to incompleteness of records

in some cases. They are often extremely meagre, when furnished at all to the public hospitals for insane, and yet, accurate and complete knowledge of the case is necessary to admit of any correct opinion being formed. In my own experience, eight cases have come to light in observation of about as many thousand patients, besides one in which there was evidence of beginning mental disturbance before the operation, the patient becoming wildly insane after a few whiffs of the anæsthetic. This patient regained her mental health during a few weeks under my care and the operation (curettage) was successfully done after her recovery. I mention the case as illustrating how several factors may be concerned in a case of insanity occurring after an operation. These were, in this case, debilitated bodily state, hysteria, great fear and apprehension of an operation, and finally, the anæsthetic. It further illustrates how under more favorable circumstances the same operation may be done upon the same individual without evil results.

Among the replies which I received to a circular of inquiry which I sent out, there were twenty from men in charge of large institutions for the insane in all parts of the United States and Canada, stating that no case had been observed or could be recalled. Some other replies were as follows:

Dr. J. F. Miller, of the State Hospital, Goldsboro, N. C., had seen no case, but mentioned a traumatic case recently observed of mania following a fractured leg. There were insomnia, nervousness and gradual development of delusions, the patient recovering in three weeks. Dr. H. L. Orth, of the Harrisburg, Pa., State Hospital, found no case recorded at his institution and in a large private surgical practice of twenty-three years never saw a case. Drs. J. G. Rogers, W. D. Granger and C. B. Burr had seen a few cases but had no accessible data. Dr. Frederick Peterson had observed a number of cases, three or four following ovariectomy, and several after simple operations like anæsthesia for extraction of teeth; he thinks the mental state was largely due to the anæsthetic rather than the operation. In this connection as bearing on Dr. Peterson's statement about anæsthesia for removing teeth, I may mention Dr. Granger's account of a case of a woman who after ether for pulling teeth became insane and killed her child; also my own case, given below, of insanity following cocaine and the extraction of twenty-three

teeth. Dr. E. C. Dudley, of Chicago, had two cases occurring after operation done about the time of the menopause, both of which recovered. One was a case of perinæorrhaphy and trachelorrhaphy; the other removal of right tube and ovary. Dr. Dudley does not think insanity follows gynæcological operations oftener than other operations. Dr. J. W. Streeter, of Chicago, in five hundred laparotomies and one hundred vaginal hysterectomies had no case of insanity. In a few cases he operated for insanity upon pelvic organs but did not find positive cure resulted. Dr. Bayard Holmes reported one case from a large gynæcological practice. Dr. A. J. Ochsner, of Chicago, from an extensive surgical practice reported four cases, and three others in which patients previously insane relapsed after an operation; two of these committed suicide. Dr. N. Senn, of Chicago, wrote me he had "never encountered a case of insanity that he could attribute to an operation." Dr. J. B. Murphy, of Chicago, had not had insanity occur after operation. Dr. John Ridlon and Dr. A. E. Hoadley, orthopædic surgeons of Chicago, had seen no cases. Dr. Jos. B. Bacon, of Chicago, rectal surgeon, reported that he did "not operate on cranks." Dr. H. A. Tomlinson had seen no case, but mentioned some operations done to cure insanity "with the *usual* result." Drs. Geo. S. Adams, Jas. Olmstead and E. B. Lane each reported one case, and Dr. C. R. Woodson three cases. In this connection I wish to express my thanks to the above named colleagues for their assistance; also to Dr. Anne C. Burnet, of the State Hospital, Clarinda, Ia., Dr. Emily Wells and Dr. Isabel Davenport, and Dr. Jas. W. Walker, now or formerly of Kankakee, Ill., for their aid in obtaining particulars for me. I am also indebted for aid to Dr. Burgess and Dr. F. Shepherd, of Montreal. An unusual case of change in the form of mental disease after an operation, was reported to me by Dr. Burnet, of a married woman aged fifty-seven, who had borne twelve sons and had symptoms of diabetes for several years. She had suffered from melancholia for ten years. She would sit for weeks without speaking and often refused food and was generally dull and depressed. She was operated on for lipoma over left scapula. From the moment of recovering consciousness she became loquacious, restless and expansive in her ideas. The wound did not heal well. Patient was sent to State Hospital, Clarinda, Ia., where she remained

highly maniacal and died in a week. Her urine was found at hospital free from albumen or sugar, but was excessive in amount with sp. gr. 1003. In this connection another curious case may be mentioned of an insane patient described to me by Dr. Isabel M. Davenport, who recovered immediately and completely after being anæsthetized with chloroform in order to make an uterine examination. The patient was a girl aged about eighteen suffering from melancholia and resistive in the extreme. She was lightly chloroformed. When she emerged she was quite rational and remained so.

I will now give such details as I possess of eight cases which I have personally had under my charge, mentioning first some cases received by me at the State Hospital at Kankakee, Ill. Of the first one I have only meagre notes. It was a woman aged thirty who had been operated on about 1890 by Dr. Henry Byford. She had been an intelligent woman. She had been self-supporting. The operation was vaginal oöphorectomy. The patient became insane soon after. She was excessively maniacal; she finally died from exhaustion. The operation had been done for dysmenorrhœa and general nervous condition. From admission to the hospital up to the time of her death she was wildly excited, destructive, untidy, obscene, and masturbated persistently.

An unusual case was that of Mrs. R. No. 2899, admitted July 4, 1888, to the hospital at Kankakee. Her age was sixty-two, residence Chicago. A native of Ireland, had been married and borne three children. Evidence of heredity negative, was of irascible temper and a rheumatic subject. Gangrene of left arm probably from thrombosis appeared in April, 1888. She was treated at St. Luke's Hospital, Chicago, and the arm amputated April 28. Early in May mental symptoms first appeared. She had been well up to the time of the occurrence of gangrene and was mentally all right when the anæsthetic was commenced, but from that time she had no memory whatever for recent events. She could tell all about her former life, her family and circumstances before the operation, but after that time her memory was a blank. Five minutes after leaving the dining-room she could not tell what she had eaten, though charged to remember. She seemed to enjoy reading, but with the book in her hand could not tell its name if the title was covered from her

view. At times she thought herself dead, at others fancied she was in some foreign city. She had ceased to menstruate at about forty-nine. There was no evidence of physical disease. Eyesight and other special senses were not impaired. When one of her daughters visited her she could not tell whether it was the oldest or youngest.

On February 1, 1889, after about six months in the hospital, the patient died of apoplexy. Gross lesions were not found in the brain, but the ventricles were distended with bloody serum. The membranes and choroid were very greatly congested. Heart showed no sign of structural lesion but the inner surface of left ventricle was very dark in color. In regard to this case it may be questioned whether there was not a diseased state of the blood-vessels previously existing which produced both the insanity and thrombosis.

The following is a history of a case occurring after ovariectomy:

L. Z., No. 4171, admitted at State Hospital August 4, 1890. Age thirty-six, single, matron of a children's home, no previous sign of insanity, nativity and residence, Ohio, habits good. At time of admission fairly nourished; after taking a warm bath her pulse became irregular and varied between seventy to one hundred and fifty, also dropping one, two or three beats at a time. The patient was lacking in self-control, considerably agitated, perceptions were good and reasoning powers good at times. She had manifested suicidal tendencies, but talked rationally on most subjects. There was no history of insanity in the family, patient had had formerly one or two hysterical attacks of short duration. The insanity was caused probably by operation for ovarian tumor, which was done about May 28th at Battle Creek Sanitarium. First indication was soon after operation. Physical condition at that time was fairly good. There was temporary mental aberration, which passed off in a few days. At this time she had a disposition to injure herself, begged friends to put her out of her misery, was greatly disturbed at thought of being unsexed. Grew better and later while visiting in Chicago insanity reappeared and August 14th she was sent to the hospital at Kankakee. Here she sometimes thought she could not talk above a whisper, occasionally flushed up and had also chilly sensations, slept poorly without bromides or hypnotics, was moody. She appeared weak and walked with an effort.

After her bath thought she could not stand and said she had been having a nervous chill every evening; was pleasant but despondent; cried after going to bed. During stay at hospital would lie on the bed or lounge during the day, and complained of smothering at times. August 16th; talks a good deal but seems quite rational. Still has "sinking spells" which seem to be due to excitement. She is easily excited. Appetite fair. August 29th; remains in bed most of the time, thinking herself very sick and that no one suffers as she does, is changeable, sometimes thinking there is nothing the matter and again saying "I am just as crazy as I can be." Is rather self-centered but otherwise normal apparently. October 10, 1890, released on trial and November 10th discharged recovered.

The next case is one in which cocaine seems to have operated with other predisposing causes to immediately excite insanity. Mr. J. W., admitted to the Milwaukee Sanitarium January 2, 1897, age sixty-five, merchant, married, six healthy children. No history of neurotic heredity or of venereal disease. Always well and a successful business man, but always working too hard and prone to worry over-much. October 1, 1896, went to a dentist, had cocaine applied and twenty-three teeth extracted. Patient was never the same thereafter, began to fail mentally and physically, became gay, wanted to smoke and drink and showed erotic excitement contrary to former habits. Smoked eighteen cigars in a day. At times was very irascible and wanted to wander about. Was seen by Dr. Walter Kempster and by him referred to me. At the Sanitarium thought the electric lamps were balloons, would try to pull them down, wanted to get his friends to take a trip to heaven. Occasionally inclined to strip off clothing. Had thickened radials and incomplete arcus senilis. Acute confusional insanity which did not improve and probably will not owing to time of life and senile changes.

Mrs. H. L., widow, two children, aged fifty-eight. Neurotic temperament, frequent domestic differences through life with husband and children. Hereditary history negative. One son had an attack of insanity about twenty and recovered, but had some years later a second attack apparently from cigarette habit, during which he made suicidal attempts. Uterine tumor removed some years before attack of insanity at which time pa-

tient became addicted to morphine which she continued for a year or two but finally overcame. Patient was a sufferer from chronic eczema. Six weeks prior to attack of insanity had a successful operation for repair of laceration of perinæum of twenty-six years' standing which extended almost through sphincter ani. Eczema became worse after operation and was at times almost maddening. Patient had much financial worry at this time and did not sleep well. Six weeks from date of operation she passed rather suddenly into a comatose condition which lasted twenty-four hours. When coma passed off patient was delirious. Urine analysis showed large amount of sugar. At this time patient was seen by me in consultation at hotel in Chicago and sent to Milwaukee Sanitarium, as delirium continued and she was unmanageable in a hotel. She came under my care in Sanitarium May 9, 1895. Sugar had at that time disappeared and was not found at any time later. She remained in acute delirium from May 9 to middle of July and then rather suddenly emerged. She became rational and made a good recovery. During most of the time of delirium neither food nor medicine could be given except by nasal tube and there was extreme insomnia for which duboisin and paraldehyde were used, the latter acting best. Patient was discharged well July 22, 1895, and remained well a year and a half, since which time I have not heard from her. In this case insanity followed the operation, but it is evident the operation was only one of many factors.

Mrs. J. H., married, age forty-one. Previous good health. Operation for perinæorrhaphy. She did not come out well from anæsthetic. In about a week showed signs of "nervousness," could not sleep, had nervous paroxysms at night. Directly after operation patient clamored for water; only a little could be given and this greatly worried her. When mental disorder appeared patient would lose control of herself and cry out for water but would not always take it when offered to her, saying she could not swallow. Continued to grow worse at home, was violent, noisy and unmanageable. Came under my care in Sanitarium November 26, 1896. Almost from the first began to sleep and rest. Worried about water first night or two and then ceased and had no further difficulty except that during two nights she woke up delirious and did not know where she was and wanted to wander about. The nurse persuaded her to return to her bed

and she went to sleep and was usually well next day. She grew rapidly stronger and went home well in about two weeks.

Mrs. M. L. J., aged twenty-seven. Mother a drunkard, began drinking after birth of patient. One sister insane. Maternal grandfather intemperate. For one week previous to going to hospital for operation was excited and had delusions. She was taken to Presbyterian Hospital in Chicago and after being prepared for operation (curettage), small quantity of ether having been administered, she jumped from table and ran to her room and was in a state of such violent agitation that the idea of operation was abandoned and she was placed under my care by the advice of her attending physician. For three days at the Sanitarium she was stuporous and hysterically agitated, would not speak, then quite suddenly cleared up and became rational, remaining so from that time and going home well and strong in five or six weeks. Has since had the operation done and passed through it all right. This case is, of course, not one of post-operative insanity, but illustrates the fact that the strain and fear and apprehension of an anæsthetic and operation, when a patient is in a weakened state, may, of itself, produce insanity, and that when well and strong the same patient may take an anæsthetic and have an operation without danger.

Mrs. L., aged thirty-five, married, seen by me twice at Grand Rapids, Mich., in consultation with Dr. Eugene Boise in July, 1894. Had formerly been a morphine habitue and her life had been one of excitement and over-exertion. Had had Alexanders operation and curettage three days before I saw her. Immediately after operation suppression of urine occurred and within two or three days she became acutely delirious and talkative and restless, had much nausea, and exhaustion was profound. Remained in critical condition a week. Under good nursing and feeding, mild sedatives, frequent spongings and cold to the head she gradually improved. Urine became normal in quantity and patient made a good recovery. I regret that it is not now possible to obtain particulars as to the anæsthetic and the clinical chart in this case, without which, perhaps, no useful deduction can be made.

The last case I have to report at this time is that of Mrs. G., a married woman of fifty-seven, who had borne two or more children, whom I saw in consultation in the winter of 1894 and

'95. She had been a sufferer from migraine through life and was of a nervous temperament. She was operated on for malignant disease of mammary and axillary glands in winter of 1894 and '95. Dr. Chr. Fenger, of Chicago, had charge of the case. The dissection was extensive and was dressed with iodoform gauze. The wound healed well by first intention but the third day the patient was delirious, had a moderate rise of temperature and considerable mental excitement and even violence. In preparing for the operation an extensive surface had been scrubbed and denuded and it was thought by Fenger that iodoform absorption had taken place. The delirium continued three or four weeks. The usual treatment in such cases was adopted and the patient made a good recovery.

I will now present a brief summary of the cases I have been able to collect. There are 33, 8 cases of my own and 25 furnished by others. There were some cases reported not included in the table. One was a case of a male in whom *petit mal* had existed before the operation and psychical epilepsy followed the operation of craniectomy. The patient was over the attack in 7 months. This happens to be the only case in my list in which operation was done on the head. In another case of perinaeorrhaphy the patient was insane 3 months and had epilepsy for 2½ years, but was subsequently well 3½ years. In another case of a woman 51 years of age, the patient was insane 10 years prior to the operation, suffering from melancholia, but the operation (removal of lipoma from the shoulder) was immediately followed by a change to acute mania, of which she died in a few weeks.

Of the 33 cases reported the average age was 38 years, varying between 21 and 65; 30 were females, 3 were males. There were 19 operations on the female pelvic organs and 3 of mammary carcinoma; the other 11 were all different operations, though of these, 2 were abdominal operations in females, 1 for hernia and 1 for appendicitis. The healing process was good in 9 cases, bad or none at all in 7, and unknown in 17. The patients were insane on emerging from the anæsthetic in 7 cases, within a week in 9 cases, 2 weeks in 2 cases, 6 weeks in 6 cases, indefinite in 2 cases. The form of mental disease was acute delirious mania in 4 cases, mania in 10 cases, delusional in 1 case, confusional in 5 cases, psychical epilepsy in 1 case, depression and melancholia in 5 cases and stuporous in 1 case. There was

a tendency to suicide in 3 cases. The prior conditions were morphine habit in one case, though not existing for some time before the operation. Neurotic individuals 10, healthy 6, lifelong migraine 1, tuberculosis 2, bad physical state 4. The dressing was iodoform in 6 cases, antiseptic in 4, not given in 23. The anæsthetic used was ether in 8 cases, cocaine 1, chloroform 2, chloroform and ether 2, not given 20. The duration of anæsthesia was 90 minutes in the nephrolithotomy but was short or not given in all the others. Of the 33 cases 21 recovered, and the duration of insanity in those recovered was 1 month 2, 2 months 1, 3 months 5, 4 months 5, 5 months 1, 6 months 1, 8 months 1, a few months 2, 11 months 1, 17 months 1, 2 years 1. Of the 33 cases, 7 were fatal. The duration till death was, 4 days 2, 1 week 1, short time 1, few weeks 1, 6 months 1, indefinite 1. The heredity was negative in 28 of the 33 cases, 1 patient had a goitrous mother and a cretin sister, 1 an insane sister, 1 an insane brother, 1 an intemperate father, and 1 relatives "nervous and one or two insane."

In this series of cases the preponderance of females, 90 per cent., as against 10 per cent. of males, is striking, although largely, perhaps, a matter of chance. The same is true of the fact that 19 out of the 33 cases were cases of operation on the female organs of generation and 2 others were abdominal operations in females, and 3 were mammary cancer in females. As to the form of mental disease, mania preponderates largely, including acute delirious mania; 14 of the 33 cases were of this variety. As to prior conditions, the previous state of the patients is not given in 8 cases, in 6 it was healthy, and the other 19 patients were either neurotic (10), migrainous (1), former morphine habitués (1), tuberculous (2), bad physical condition (4). Regarding the anæsthetic used and the time it was continued and length of the operation the table scarcely shows anything worthy of note, except that 7 of the 33 cases were insane on waking from the anæsthetic. The ratio of recoveries (21 to 33) is quite high, being 63 per cent. But all but 2 of the 21 who recovered did so within a year and 15 within 6 months. Five of the 33 cases became chronic apparently and 7 were fatal, and those which were fatal were quite speedily so, 2 in 4 days, 1 in a week, 1 in a "short time," 1 in a "few weeks." The showing as to heredity is quite negative.

In closing, I would say it seems to me a study of accessible data of insanity following operations warrants a statement that our knowledge on this subject is as yet insufficient to admit of any useful deductions, but in a certain proportion of cases which is entirely undetermined as yet, insanity develops after surgical operations, and these cases fall into two groups. First.—Those in which the operation is merely one of several factors tending to produce insanity. Second.—Those in which we can discern only the working of mental or physical causes chiefly connected with the operation itself.

The first group is by far the larger of the two and our knowledge does not as yet warrant the setting up of a definite clinical picture of the form of insanity in either case. Both groups are largely made up of neuropathic individuals.

There is something worthy of attention in the frequency shown by my cases, and often remarked by others heretofore, with which insanity follows operations upon the pelvic organs, the external genitalia, and the mammary glands of women.

Finally, the part played respectively by the anæsthetic in its different forms and by the shock of the operation needs careful and extended study to admit of any proper estimate of the influence of each.

Publication of table is omitted until further study can be made of the full collection of cases, many of which were received too late to include in the above paper.

DISCUSSION.

DR. A. B. RICHARDSON: I will simply start the ball rolling in this discussion, for this is a subject that ought to bring out an interesting discussion. The subject has two aspects, first, that relating to the curative or beneficial effects of operations, and the second, the possibility of prejudicial effects after such operations. Individually, my experience has been just about this. We have in the course of our work at the hospital quite a good many operations. In the very large majority of the cases, we do not notice any particular influence on the mental state. In several instances I have seen quite a decided beneficial effect, and it seems to me that that which I shall now outline may be taken as a sample of the cases in which we may expect beneficial results. It was a case of intra uterine fibroid in a patient forty years of age, which has led to excessive metrorrhagia, great anæmia and the development of very decided delusions and a

changed disposition. The removal of the uterus, the improvement in the condition of the blood and the general state of the nutrition removed those delusions entirely and the patient recovered. I think there could be no doubt of the influence of the operation. I remember another case in which there had been slight neurasthenic symptoms previous to an operation for the cure of lacerated perineum and cervix and a cystocele and following the operation a very severe attack of acute mania developed, from which the patient recovered. Now, there we had a combination of causes in which the operation was only one among several, and in cases of that kind we may anticipate that the shock of the operation may be sufficient to develop an attack; but in nearly every one of our cases, we must expect and look for something in addition to the shock to ascertain the full cause of the trouble. The operation alone, with no predisposition and no special susceptibility of the nervous system, will not often develop mental disease, but on the other hand, we can not expect the operation to remove the mental disease unless the condition demanding operation stood in the relation of cause to the mental disease.

DR. H. M. HURD: This question of insanity due to surgical operations deals with a subject which is very complicated and presents a variety of aspects. Dr. Dewey has referred in a very interesting way to certain aspects of the question, but he has not exhausted the whole subject. We know that in many forms of disease following surgical operations we must take into consideration the fact that an anæsthetic has been used which often produces a form of confusional insanity; we must also consider the question of shock. We also get patients suffering from iodoform or similar drug poisoning, and, in cataract cases, we sometimes meet a form of acute mania produced by atropia. A similar violent form of mania may follow the administration of salicylate of sodium. We also meet with cases, which we know to be due to infection. This happens, not frequently, in infected patients after operations for the repair of a laceration of the perineum, because these operations cannot be absolutely antiseptic. In some cases insanity occurs from direct infection. In addition to that we have others causes that are operative and ought to be considered. In serious surgical operations we frequently get a general toxic condition due to defective elimina-

tion by the kidneys. Then, too, the effect of ether is to interfere with elimination by the kidneys, which is increased in cases of laparotomy by the fear of producing vomiting if water is ingested. Hence the surgeon restricts the amount of water taken by the patient and the urine in consequence becomes suppressed almost immediately after the operation. I have been interested within the last six months in some observations made at the Johns Hopkins Hospital in cases of this character. It has been found that liberal sub-cutaneous injections of sterilized salt solution will maintain elimination by the kidneys. In many instances, several pints of normal sterilized salt solution have been injected into the tissues of the breast or the loose tissues of the arm to supply the fluid required by the body which cannot be taken by the stomach, and to prevent the starvation of the system for water, which formerly occurred. The result has been in many cases to obviate a tendency to mental disturbance.

Another factor in producing insanity should be borne in mind, viz., the effect of the removal of certain organs. Instances of insanity following the removal of the ovaries are not unknown and slight mental disturbances in women often follow such operations. After complete removal of the thyroid gland, we often get acute insanity.

Referring to the remarks of Dr. Richardson, I would say that with an absolutely healthy organization, a patient may go through fire or water without developing insanity. Where mental symptoms develop, we must take it for granted that we are dealing with a susceptible organization.

Judging from experience in a large general hospital, I would add that the surgeon who never operated upon cranks must have had a limited field of usefulness.

DR. W. L. WORCESTER: I think that it is perhaps worth while to call attention to one class of cases that has not been mentioned yet, of which quite a number have now been reported following the operation of castration for enlarged prostate. They may, to a certain extent, be brought into parallelism with cases occurring in women after removal of the ovaries.

I am also reminded of one case in my own observation that seems to be analogous to one of Dr. Dewey's, in which a miner became insane as the result of a contusion of the leg produced by a falling rock. In that case there was a great deal of maniacal

disturbance, and the patient shortly afterwards committed suicide. The problem in most of these cases is very complex. The greater part of the patients are subjected to anæsthesia which produces a transitory mental disturbance, and an unstable system may take these changes as more or less permanent. In many cases it is possibly due to septic infection and in some proportions a stoppage of the secretion of the kidneys may set up a temporary disorder.

DR. GEORGE H. ROHÉ: Dr. Dewey spoke of the rather large number of recoveries in these cases following operations, but there is another point to be considered here, and that is that there is a large death rate also. A large proportion of those cases which Dr. Dewey has collected and of other statistical collections show that the form of disturbance which is called acute delirious mania or confusional insanity is frequently present. Now, it is my belief, not based upon experience, but upon the study of the records of these cases, that the acute mania comes on very generally after the operation almost coincidently with the development of acute septic conditions, and I am thoroughly convinced that the larger proportions of such insanities, particularly if they come on within the first week, are to be attributed to septic infection. Dr. Hurd has referred to that class. The point that has been made that these cases usually occur in individuals with neurotic tendencies does not seem to me to be of great importance, for those are just the kind of people that go insane anyway. There is, therefore, a reason why this class of cases should be larger than the other. I am quite sure also that a considerable proportion of cases of women that become insane after the removal of the uterus or appendages, or both, become insane just as women in a large proportion of cases do at the normal development of the menopause and it is nothing more than a form of climacteric insanity that we have usually. I believe Dr. Dewey expressed the opinion that there is no special form of post-operative insanity and I concur with that.

I believe, too, in the influence of anæsthetics; that a pretty large proportion of cases of so-called post-operative insanity become insane from the anæsthesia. Dr. Hurd pointed out that it is more noticeable in those cases where there was beginning disease of organs, for instance, the kidneys. In the first case of Dr. Dewey's I understood that the operation was done

for gangrene, and I do not remember whether he stated that examination of the urine had been made in that case. It struck me that there must have been some cause for the gangrene and I wondered if it was due to diabetes.

DR. DEWEY: It was supposed to be due to thrombosis.

DR. ROHÉ: The previous history of the patient is apt to be very indefinite and the physical examination is so often defective, or the records of the examination are, that if the surgeon, perhaps three years after, is asked about it, his memory cannot be relied upon to give the details with sufficient definiteness to be of value.

I have profited very much from the paper and am very glad that the doctor has called attention to the deficiency in our knowledge in these cases, and trust that future records will be more definite than those of the past.

DR. DEWEY: My paper was prepared in order to present such facts as I could collect, but a great deal was omitted from my paper, because it would require too much time to read. I would like to ask the assistance of all the members of this Association if I should in following up this subject send them blanks to be filled out. I appreciate the annoyance of receiving blanks, but it is frequently necessary in order to get full statistics.

THE COMMITMENT AND DETENTION OF THE INSANE WITH ESPECIAL REFERENCE TO THE LAWS OF MARYLAND.

By EDWARD N. BRUSH, M. D.

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This paper is presented not with an intention of bringing forward any new facts or principles in the department of jurisprudence relating to the legal commitment of the insane to hospitals, but in the hope that discussion, if I shall be so fortunate as to provoke one, may bring forth some points, based upon the extended experience of members of this representative association, which will be of aid to us here in Maryland.

The law under which the insane, except those under criminal charge, are now committed is practically embraced in the following sections: "When any person is alleged to be a lunatic or insane pauper, the circuit court for the county in which such person may reside, or the criminal court of Baltimore, if such person resides in the city of Baltimore, shall cause a jury of twelve good and lawful men to be impaneled forthwith, and shall charge the said jury to inquire whether such person is insane or lunatic, and if found so, it shall be the duty of the court to cause such person to be sent to the almshouse of the county or city to which he belongs, or to an hospital or to some other place better suited, in the judgment of the court, to his condition, there to be confined at the expense of the county or city until he shall have recovered and been discharged in due course of law. Nothing contained in this section shall prevent the friends or relations of such lunatic or insane person from confining him, or providing for his comfort."

"No person shall be deemed a lunatic pauper under the preceding two sections who shall possess in his own right any property real or personal, or be entitled to the use of any property by last will and testament, or deed of trust for his use or benefit;

nor shall the child of any person whose property is actually assessed to one thousand dollars who may be afflicted with lunacy, and whose usual place of abode has been with his parents, be entitled to the benefit of the preceding sections."

Private patients are committed under the following section; as are also some cases at public expense, notably those at Bay View:

"No person shall be committed to or confined as a patient in any institution, public, corporate or private, or almshouse or any other place for the care and custody of the insane or idiotic, except upon written certificates of two qualified physicians made within one week after examination of said alleged lunatic and setting forth insanity or idiocy of such persons and the reason for such opinion."

It is unnecessary in this presence to point out all the defects in these sections, but at the risk of trespassing upon your patience I desire to call attention to the more prominent ones.

The whole procedure, where it is not unnecessarily cumbersome and expensive, is oppressive, and where not oppressive is lax, and would, without much doubt, be found by the courts unconstitutional.

An effort was made at the last session of the State legislature to correct the more obvious defects in the lunacy code of the State by certain amendments which will be hereafter presented. Those interested in the movement received cordial reception at the hands of the members of the State Senate and House of Delegates and the amendments passed the Senate with little or no opposition and passed two readings of the lower house; failing only of final passage by neglect, in the excitement and rush of the final days of the session, to call it up for the third and final reading.

Some slight opposition was encountered, but it was of no material force or importance except that a part of it came from sources from which a hearty support of any measure looking toward an improvement in lunacy administration would be expected. The greatest force to overcome was the *vis inertiae* of those who, not knowing, or unable to appreciate a better way, were satisfied that that which is, must necessarily be right, because it existed.

In vain was pointed out to them the experience of other States when their lunacy laws were interpreted by the courts, notably Minnesota and Wisconsin where the whole question of the commitment of the insane was for a prolonged period in a condition of chaos.

In November, 1894, the law governing the commitment of insane persons in Wisconsin was declared unconstitutional for the reason that the alleged insane person was granted no opportunity for hearing and defense before being committed to an institution. In consequence there was no act left upon the statute books by which patients might be committed to the institutions and great hardships and suffering resulted. Advantage was taken in some cases of the old statute permitting summary commitments in dangerous cases and in others the alternative was adopted of causing the arrest of the alleged insane person on a criminal charge and then obtaining an inquisition into his mental state. This latter procedure seems certainly an outrage. Insanity is a sufficient affliction without submitting the patient to the indignity of being charged with a criminal offense simply for the purpose of getting him within the knowledge and power of court. Obviously the criminal charge was simply an excuse, without basis, and clearly made for the sole purpose of being set aside upon the patients being found insane.

It satisfied these indifferent ones that the courts of Maryland had never passed upon the law. Apparently they could not, or would not, appreciate, what any tyro in jurisprudence could tell them, that at any time a law which permitted the commitment of patients upon certificates which were not sworn to and the signatures to which were not verified, and without the knowledge or approval of any court, would at once, upon being brought up for review by the courts, be declared unconstitutional and void, and that we would then be left with no act upon the statute books whereby a patient might be cared for, beyond the tedious and expensive process of appointing a committee by *inquiring de lunatico*, except some summary process which might allege for its excuse the dangerous character of the patient.

The objections to the present law are that the method of procedure to secure the care and treatment of an insane person at public charge is unnecessarily tedious and expensive. The summoning of a jury to inquire into the lunacy of a fellow citizen

when it is done to secure for him medical care and attention and the protection of a hospital would seem to be one of the most cumbersome methods imaginable, fraught with dangerous delay and productive of unnecessary expense and exposure. And why the jury? Must twelve good men and true be called to determine whether a case of malaria demands quinine or arsenic, or whether Mr. Blank's hip is dislocated or the neck of the femur fractured? Are juries summoned to send a case of small-pox to the pest house or for the sequestration of a case of leprosy? The entire question is a medical one and must in the end be decided by medical opinion. Even after the jury acts and the supposed insane patient is committed to an institution his detention depends upon the opinion of the medical officer of the institution, who if he believes the jury in error is in duty bound to discharge the patient, * and, believing him to be sane, detains him at his peril.

I will not insult your intelligence by dwelling upon the obvious impropriety, to say nothing of the danger to the patient, of bringing a case of active maniacal excitement, for example an attack of puerperal mania or a case of agitated melancholia, before a jury.

The present law is unjust in that it requires that those cases seeking help and care in their dire necessity must be stigmatized as "pauper lunatics." In the majority of instances they are not paupers, and but for the accident of insanity which strikes down the bread-winner or the housewife, would not in their distress, as they have not in the past, ask or require public assistance.

The act is still more unjust in that it would, if strictly carried out—and of what value is any law which is not enforced?—deny public aid in the most unfortunate and crippling of all afflictions, to all persons who are possessed of any property real or personal or entitled to the use of any property or whose parents are actually assessed to the value of one thousand dollars. In other words, the whole aim and intent of the lunacy law seems to be to place the stamp of pauperism upon all who come under its provisions as far as concerns commitment to public asylums at public cost.

Now I am the last who would urge or even countenance public or private aid to those who are able to help themselves. Our

* At the State Asylum at Utica in 1872 fourteen persons committed by juries were discharged after observation and careful examination—"not insane."

public and private charities are already responsible for the creation of a class of dependents, who have been taught by the very ease of obtaining charitable aid to forget the comfort and nobleness of self-help and independence. In the majority of instances of insanity, however, occurring in the families of the laboring classes, and of those dependent upon small salaries, the necessity for public or private aid to some extent is self-evident. The attempt to care for the patient at home is not only attended with grave risks as to recovery, but is often practically impossible, owing either to the home surroundings or the character of the case. If the father or mother of the family is the patient we have in the one instance the loss at once of the wage earner and in the other the necessity often of replacing the housewife by hired service, especially where it is necessary to care for a growing family and there are no daughters or others to take temporarily the mother's place and duties. To refuse public aid for one member of such a family would often result, from the expense, direct and indirect such refusal would involve, in throwing in a short time the whole family upon public or private charity, by exhausting its resources. This is no idle speculation but can be confirmed, I have no doubt, by the experience of many in this audience.

The section permitting the commitment of the insane upon the certificates of two physicians, although following the general practice in great Britain and in the older States of the United States, and a practice which has never thus far resulted in the production of a single case in which ulterior motives were shown on the part of the certifiers or those upon whose request the certificates were made, will be seen to be in several respects defective. A subsequent section of the law setting forth the necessary qualifications of the certifiers is all that can be desired, but the section under consideration does not state how old the certificates may be and still be effective for purposes of confinement, the certificates and signatures are not required to be verified under oath, nor are they to be presented to any judicial authority for approval or review.

The proposed amendments to the law are as follows:

SEC. 1. Be it enacted by the General Assembly of Maryland, that sections one, three, thirty-one, thirty-two, thirty-seven, of the Code of Public General Laws, title, "Lunatics and In-

sane," be and the same are hereby repealed and re-enacted so as to read as follows:

1.—Whenever one or more persons, relatives or next friends, of a person alleged to be insane, or in the absence of relatives or friends, any person shall petition any judge of the Circuit Court for any county of this State in which the alleged insane person may reside, or the Criminal Court of Baltimore, or the Circuit Court of Baltimore City, or the Circuit Court No. 2 of Baltimore City, in the City of Baltimore, if that be his residence, for an inquiry touching such alleged insanity, for the purpose of securing the care and treatment of the alleged insane person at public expense, it shall be the duty of the judge so petitioned to direct the said petitioners to procure the examination of the person alleged to be insane by two competent physicians possessing the requirements hereinafter prescribed in Section thirty-two. The said physicians, after such examination by them personally made, if they find the person so examined insane and a proper person for care and treatment under the provisions of this act shall so certify under oath in writing according to forms hereinafter made and prescribed in Section thirty-one. Upon the presentation to such court of such certificates duly subscribed and sworn or affirmed to before any person duly authorized to administer oaths and take affirmations, it shall be the duty of the court to approve the finding of insanity as set forth in the said certificates, in writing upon each thereof as follows: Pursuant to the provisions of the Code of Public General Laws as amended by the Act of 189..., Chapter..., I hereby approve the finding of insanity in the case of..., for the purpose of care and treatment upon the facts set forth in the within certificate. Dated..., 189..., signed..... But nothing in this act shall prevent the judge to whom the said certificates are presented, before approving said certificates, from requiring a new examination by the same or other physicians, or summoning them or the alleged insane person before him, or in his discretion directing an examination into the alleged insanity by jury.

The relatives or friends, trustees or guardians of any alleged insane person may in writing request the managers, trustees, superintendent, medical superintendent or chief medical officer of any institution, asylum, hospital, home or retreat for the insane, or of any other licensed place where the insane are con-

fined for care and treatment, to receive and detain for care and treatment any such alleged insane person as a private patient, and such insane person may be so received and detained upon such written request, upon the presentation with such request, of the certification of two physicians, made in accordance with the form hereinafter prescribed in section thirty-one. Such certificates must bear date of examination of not more than twenty days prior to the reception or commitment of the person mentioned therein, and must have received or must receive within five days thereafter, the approval in writing of a judge of a circuit or criminal court of the State of Maryland made in accordance with the form prescribed for patients supported at public expense. In cases wherein the medical superintendent or chief medical officer or attending physician shall certify in writing that immediate admission in any particular case is necessary and proper, and for the patient's best interest, persons may be received into any of the institutions hereinbefore provided, upon the request of relatives or friends, trustees or guardians, as before recited, and detained, for a period not exceeding three days, pending an examination by two physicians duly qualified to make certificates of insanity for the purpose of detention, and the making by them of the certificates required by law, or the correction of certificates which may be found defective. Such certificate of emergency shall be endorsed by the said medical superintendent, chief medical officer or attending physician upon the written request made by the relatives or friends of the patient so admitted.

3. The Court, petitioned as hereinbefore recited in section one, shall upon being satisfied of the insanity of the person alleged to be insane make due inquiry into the indigence of the person named in the said petition, and whether he has relatives, trustees or guardians who should be charged with the cost of his care and treatment, and upon finding that the said insane person is without sufficient means or income to meet the expenses of care and treatment under the visitation of insanity and that there is no person, relative, trustee or guardian who should be charged with his care and support, shall order in writing, the commitment of the said insane person to such State, county, municipal or other asylum, designated by resolution of the county commissioners or other competent authority to

receive the indigent insane of the county or city, as shall in the opinion of the Court be for his best interests, there to be confined at the expense of the county or city of his residence, until discharged in accordance with law. The order given as above, together with the medical certificates endorsed, as hereinbefore required in section one with the approval of the judge, or a copy of the said certificates and endorsement, and order, duly certified under seal of the court, shall be the authority for the reception and detention of the said insane person, and the said order and certificates shall be carefully filed and preserved in the office of the institution to which the commitment has been made, and shall form a part of the official records of said institution. But no order shall be of force which shall be presented more than fifteen days after the date of such order.

31. No medical certificate shall be made for the purpose of securing the commitment of any person to any hospital, asylum, home or retreat, or any other place where the insane are confined for care and treatment, except in accordance with the following form:

STATE OF MARYLAND, }
County or City of.... } ss.

I, a resident of...., in the County...., and in the State of Maryland, being a graduate of...., (here name the medical school) and being a legally registered physician, in the actual practice of medicine, and having practiced as a physician....years, hereby certify under oath, that on the....day of...., 18...., at...., I personally examined....of...., (here insert residence, giving street and number if in the city) aged....and by occupation a....(sex)....(married, widowed or single)....and that the said....is insane and a proper person for care and treatment in accordance with the Code of Public General Laws as amended by the Act of 189..., chapter...., and I further certify that I have formed this opinion upon the following grounds:

(Here state specifically what the conduct, appearance, conversation, delusions, etc., of the person examined have been to induce the belief that he or she is insane. Only the results of personal observation should be stated, and those in detail sufficient to convey an impression of the conduct and condition of the person examined to another.)

And I further certify that I am not related by blood or marriage to the said...., or in any way connected as medical attendant or otherwise, with the hospital or other establishment in which it is proposed to place the said....

(Signed)....., M. D.

Subscribed and sworn (or affirmed) to before me, this....day...., 189....

..... [SEAL.]

Upon the reverse of the certificate in the usual position for docketing shall appear the following:

No....Name.....Residence.....Admitted.....

STATE OF MARYLAND, } ss.
County or City of....

Pursuant to the provisions of the Code of Public General Laws as amended by the Act of 189..., chapter..., I hereby approve of the finding of insanity in the case of..., for the purpose of care and treatment, upon the facts set forth in the within certificate.

.....of.....Court of..... Dated....

32. It shall not be lawful for any physician to certify to the insanity of any person for the purpose of confinement in any institution, hospital, asylum, home or retreat for the insane, who is not a legally registered practitioner of medicine in the State of Maryland, and who has not been in the actual practice of medicine for at least five years preceding such examination. Nor shall it be lawful for any physician to so certify who is related by blood or marriage to the person so examined, or who is connected as medical officer, trustee or manager, official visitor, or inspector, or in any other manner with the institution to which it is proposed to commit the person so examined. And such certificate shall be made only after personal examination, and in accordance with the form prescribed in the preceding section.

37. The medical superintendent or chief medical officer of any institution, hospital, home or retreat for the insane, except almshouses, may receive and detain therein for purposes of care and treatment at the expense of such person, or the expense of his relatives or friends, any person who is desirous of submitting himself to treatment and makes application therefor in writing. No such person shall be detained for more than three days after having given notice of his desire and intention to leave such institution, nor shall any person be received or detained as a voluntary patient whose mental condition is such, or becomes such, that such person cannot comprehend the act of voluntary commitment, or be able to request his discharge or give continuous assent to detention. Every such voluntary patient so admitted, shall be reported to the lunacy commission as provided in cases legally committed, and shall be further reported to the lunacy commission, with a statement of the mental condition of said patient at the end of each three months of said

patient's residence in the institution to which he has requested admission, and when discharged therefrom. A copy of this section shall be read or exhibited to every person requesting admission to any institution in accordance with its provisions.

SEC. 2. And be it enacted, That the following new sections be added to said article 59, to follow section 38, and to be designated as sections 39, 40 and 41.

39. The superintendent or chief medical officer of every institution, hospital, asylum, home or retreat for the insane, to which persons may be admitted in accordance with this act, shall discharge any patient except one under criminal charge, upon being satisfied by personal examination and inquiry that said patient has recovered. He may also discharge any patient who appears quiet and harmless and who is not likely to improve under further treatment, upon being satisfied that such patient's relatives or friends are able to give him proper care and supervision. He shall not discharge any patient now or hereafter detained in any institution, asylum, home or retreat who he has reason to believe will be dangerous to himself or others, except upon the order of some court of competent jurisdiction, to which he shall report, under oath, his reasons for the belief that such patient is dangerous. Nothing in this section shall prevent the relatives or friends of any patient maintained by them at private expense in any institution, hospital, asylum, home or retreat for the insane in this State, removing such patient at any time, but in the event of the removal of any patient so maintained, who is believed by the superintendent or chief medical officer of any institution from which such removal is made to be dangerous to himself or others, it shall be the duty of such superintendent or chief medical officer to give notice in writing to the relatives or friends, making such removal, that in his belief the said patient is dangerous, and his reason for such belief, and to cause a copy of said notice to be filed with the papers upon which said patient was committed.

40. Whenever in the opinion of any medical superintendent or chief medical officer of any institution, hospital, asylum, home, or retreat for the insane, it may be for the benefit of any patient to grant such patient leave of absence, or parole, on trial, such parole may be granted for a period not exceeding thirty days, which parole may be extended for a further period

not exceeding thirty days upon application in writing endorsed by the relatives, friend or other person at whose instance the said patient was first committed, but no subsequent extension of such leave of absence or parole shall be made, nor shall any patient be again admitted or received into or detained in any institution who has been absent therefrom for more than sixty days, except upon a new commitment, according to law, except in accordance with the provisions made for the reception of voluntary cases. Any such patient may be returned by his friends or brought back by duly designated officers of the institution from which he has been paroled at or before the expiration of the period of parole, as provided for the return of patients who have escaped from institutions, asylums, hospitals, homes or retreats for the insane within this State.

41. It shall be unlawful to convey any woman patient to any institution, asylum, hospital, home or retreat for the insane or to transfer any woman patient from or to any such place except such woman patient be accompanied by some relative, friend or nurse of the same sex. This shall not apply to any woman patient accompanied by her father, husband, or adult brother or son.

3. And be it enacted, That this act shall take effect from the date of its passage.

It will be seen that the commitment of the insane by trial by jury, except in the discretion of the court is done away with. That for the insane supported at public charge, as well as for those at private expense, two medical certificates are necessary, stating under oath as a *medical opinion* that care and treatment in a hospital or other place of detention for the insane are necessary and the reasons therefor. These certificates form the basis for a judicial order for the care and treatment of public patients and, as also in the case of patients received into institutions at the request and charge of their relatives or friends, must be endorsed, either before commitment, or within five days thereafter, by the approval of some judge of a circuit or criminal court in the State; thus making even the commitment of private patients a matter of judicial knowledge and approval. This section also permits emergency commitments and the detention of patients pending the correction of defective papers.

Section thirty-one establishes the form of certificate and Sec-

tion thirty-two sets forth the qualifications which must be possessed by physicians who make certificates of insanity for purposes of commitment. Section thirty-seven permits the reception of voluntary patients and their detention under proper and carefully regulated safe-guards. Section thirty-nine regulates the discharge of patients and section forty permits the discharge of patients on trial or parole.

Serious division of opinion exists as to the constitutionality of of an act permitting the commitment and detention of an insane person without jury trial. Those who argue in favor of the necessity of a jury trial base their contention upon the constitutional provision that no man shall be deprived of his liberty "except upon the law of the land," or without "due process of law" or "the judgment of his peers."

The numerous medical objections which may be urged against a jury trial need not here be repeated. Let us examine as far as may be into what some of the best authorities say as to the matter from a legal standpoint.

Tiedeman (*Limitations of the Police Power in the United States*) very pertinently says: "The duty of the State, in respect to its insane population, is not confined to a provision of the means of confinement, sufficient to protect the public against any violent manifestations of the disease. The duty of the State extends further, and includes the provision of all the means known to science for the successful treatment of the diseased mind. This aspect of the duty of the State is so clearly and unequivocally recognized by the authorities and public opinion in some of the states, that the statutes impose upon the State asylums the duty of receiving all voluntary patients for medical treatment, upon the payment of the proper reasonable fees, and retaining them as long as such patients desire to remain. In this respect the insane asylum bears the same relation to the public as the hospital does. As long as coercion is not employed, there would seem to be no limit to power of the State to provide for the medical treatment of lunatics except the legislative discretion and the fiscal resources of the State. But when the lunatic is subjected to involuntary restraint, then there are constitutional limitations to the State's power of control.

"If the lunatic is dangerous to the community, and his confinement is necessary as a means of protecting the public from

his violence, one does not need to go farther for a reason sufficient to justify forcible restraint. The confinement of a violent lunatic is as defensible as the punishment of a criminal. The reason for both police regulations is the same, viz., to insure the safety of the public. * * * But the State, in respect to the care of the insane, owes a duty to these unfortunate people, as well as to the public. The demented are as much under a natural disability as minors of tender age, and the State should see that the proper care is taken of them. The position has been already assumed and justified that the State may make proper provision for the reception and cure of voluntary patients, suffering from any of the forms of dementia, and *for the same reason that the proper authority may forcibly restrain one who is in the delirium of fever and subject him to medical treatment, the State has undoubtedly the right to provide for the involuntary confinement of the harmlessly insane, in order that the proper medical treatment may be given and a cure effected.* The benefit to the unfortunate is a sufficient justification for the involuntary confinement. He is not a rational being and cannot judge for himself what his needs are. Judge Cooley says: 'An insane person, without any adjudication, may also lawfully be restrained of his liberty, for his own benefit, either because it is necessary to protect him against a tendency to suicide or to stray away from those who would care for him, or because a proper medical treatment requires it.' If the possible cure of the patient be the only ground upon which a harmless lunatic could be confined, as soon as it has become clear that his is a hopeless case, for which there is no cure, he becomes entitled to his liberty. As already stated, the mere possibility of his becoming dangerous, through a change in the character of the disease, will not justify his further detention. But the confinement of a hopeless case of harmless lunacy may be continued, where the lunacy is so grave that the afflicted person is unable to support himself or to take ordinary care of himself, and where if discharged he will become a burden upon the public. That manifestly could only happen where the lunatic was a pauper. If he is possessed of means, and his friends and relatives are willing to take care of him, the forcible confinement cannot be justified. These points are so clearly sustained by reason that authorities in support of them would not be necessary, if they could be found. The difficulties, in respect to

the question of confinement of the insane, arise only when we reach the discussion of the preliminary proceedings, which the law requires to justify the forcible restraint of an insane person."

* * * * *

"It is universally conceded that every man for his own protection may restrain the violence of a lunatic, and any one may, at least temporarily, place any lunatic under personal restraint, whose going at large is dangerous to others. But this restraint has been held by some authorities to be justifiable without adjudication, only while the danger continues imminent, or as a preliminary to the institution of judicial proceedings by which a judgment for permanent confinement may be obtained. It is believed that no court would justify a permanent confinement of an insane person at the instance of a stranger without adjudication; and in almost all of the States the statutes provide for an adjudication of the question of insanity in respect to any supposed lunatic found going at large and without a home and forbid the confinement of such person, except after judgment by the court. It may be assumed, therefore, that in those States the permanent confinement of an alleged insane person cannot be justified by proof of his insanity, not even of his dangerous propensities, where the confinement was at the instance of a stranger or an officer of the law, unless it be in pursuance of a judgment of a court of competent jurisdiction."

In the section of the proposed amendment the commitment of the insane at public charge is placed clearly in the hands of a court of "competent jurisdiction," and is made upon the "judgment" of that court which may in its discretion summon a jury.

Is a jury necessary to keep within constitutional limitations?

Ordronaux (Judicial Aspects of Insanity, page 74) says on this point: "It is a mistake also to suppose that there is any constitutional right to it, since in the early days of our jurisprudence Chancellor Kent held that a court of equity could at any time try an issue of insanity without any jury."

Again, upon this same point, he says: (Introduct., pg. LXIV and V.) "The principles of universal jurisprudence show that, in every case where guardianship of the person is necessary *in favorem vite*, it may be exercised by a court upon a view of the facts satisfying its conscience, and that it is entirely within its discretion, as to how or by what it means it shall enlighten

itself. Thus in *Smith v Carl* (5 Johns Ch. 118), Kent Chancellor held that a court of equity had original jurisdiction to be exercised according to a sound discretion to try questions of fact without the intervention of a jury. And the same principle had been previously affirmed by the House of Lords in *Evans v. Blood* (4 Bro. P. C. 557), both cases involving issues of insanity.

"Upon such authorities as these, it does not seem necessary to discuss any further the question whether there be such a thing as common law or even a constitutional right to a trial by jury of a lunatic to determine whether he shall be restrained of his liberty, that being a result which flows presumably, though not absolutely from his status, and which the court alone may in its discretion decide. The finding of lunacy by jury does not *per se* authorize restraint upon personal liberty,* because this latter is a distinct fact varying with circumstances. Hence in *Nyce's case* (2 Brewster, 400) it was held that even after a finding of lunacy, it is a question for the court whether the patient shall be restrained."

Judge Cooley, whose statement (Cooley on Torts 179) that the insane may be confined without adjudication, has been referred to in the quotation from Tiedeman, further says: "The restraint for this purpose may be imposed under the discretion of those who by reason of relationship are the proper custodians of the person or by the State acting under its proper officers. What is said here concerning persons insane will apply to all who by reason of disease or mental infirmity of any sort, are incapable of subjecting their actions to the control of reason."

Hon. David McAdam, one of the justices of the New York Supreme Court, in an address before the Society of Medical Jurisprudence of New York in commenting upon the lunacy law of New York upon which the proposed amendments to the Maryland statutes are based, says: "The New York statute, though in operation since 1874, has not been subject to judicial criticism; it has survived all attacks made upon it. * * * Much might be said in favor of our statute as a lawful exercise of legislative

* It may be a matter of question to what extent the finding of a verdict of insanity against a citizen by a jury affects his civil rights. The finding of such a verdict under a writ *de lunatico inquirendo* takes away these rights, and they can only be restored by "due process" of law, the steps of which are well defined. If this is true of any verdict of insanity by a jury, all patients so committed must of necessity when recovered take steps to set aside or supersede the verdict, in order to legally exercise their civil rights. I can find no ruling or opinion on this point. E. N. B.

power." This statute requires for the commitment of an alleged insane person the sworn certificates of two physicians, which certificates, as in the proposed law for Maryland, must be laid before some judge of a court of record for approval in writing.

Judge Cooley, who writes the chapter upon the fourteenth amendment to the Constitution of the United States in Story's Commentaries on the Constitution, says, (Vol. II, pg. 693) referring to the "law of the land," quoting from Webster, "By the law of the land is most clearly intended the general law; a law which hears before it condemns; which proceeds upon inquiry; and renders judgment only after trial." This now famous quotation I have heard urged in courts as against the constitutionality of commitments to asylums without trial by jury. A hearing requires due notice, and in some States the omission of a provision for notice to the patient of hearing and trial has been held to invalidate the law. In the large majority of instances in which commitment to hospitals and asylums are made, the patient would not comprehend the object or intent of a notice for hearing; in others such notice would merely have the effect of exciting the patient and adding to his malady; while in others it would be productive of a course of litigation which would be disastrous to the patient and of infinite harm and distress to his friends.

Whom would the law "hear," the patient, or those who sought his care and treatment? Would witnesses be called to contradict those who alleged insanity? If so, there are many cases of patent insanity of which the assertion of sound mental health is made by some of the patients' friends or neighbors. After the hearing, in the words of the quotation, and only after, the law condemns, presumably if guilt is found. Is insanity a crime or offense for which trial and condemnation are necessary? Judge Cooley (Constitutional Limitations pg. 431) in quoting the definition of Webster here referred to, says it is apt and suitable as applied to judicial proceedings which only "proceed upon inquiry" and "render judgment only after trial." But is the commitment of an insane person, either by the public authorities or by his friends for care and treatment a "judicial proceeding," is there a trial of any charge or issue, is judgment pronounced against the patient for the "crime of being a sick man"? An accused person, we are informed, must be put on trial upon some regu-

lar and established form of accusation. Must, in the case of insanity this be by the grand jury, or upon information, and what form shall the accusation take? I do not believe any right thinking man will for a moment contend that when the liberties of the citizen were so thoroughly protected by the constitutions of the United States and of the various States, the framers of those instruments had in mind the necessities of care and protection to the insane or felt that their commitment needed any such rigid rules as some who interpret constitutional law would have us believe.

In Maryland we inherit our Bill of Rights from the Magna Charta of our English ancestors, incorporating, as we do, that most important portion thereof, which guarantees to every citizen the enjoyment of life, liberty and property unless forfeited by the judgment of his peers or the law of the land. It was this twenty-ninth chapter which alone says Sir William Blackstone would entitle it to the name it bears, the Great Charter. It is questionable, however, whether the Great Charter intended that only by the judgment of his peers was the liberty of an insane man to be abridged, or whether on the contrary the law of the land did not, *as in fact it did and has continued to do ever since*, permit the care and safe custody of the insane without the intervention of a jury trial, so long as both were conducted under proper and reasonable safeguards.

In England it was not until more than a hundred years after the granting of the Charter that any reference to the insane appears in the law (17th Edward 2 Chap. 9). This provided for the custody of the property of the insane, and was the origin of the now common writ *de lunatico inquirendo*, issued for the purpose of appointing a committee of the person and property of insane persons. "But in no sense," says Ordranax (*op. cit.* pg. XLIII introduct.), "was such inquiry instituted to determine upon their liberty. That was left to be determined alone by the common law, and in each case *ex necessitate rei*, as in the instance of any person who, like an infant, or a married woman, was not *sui juris*. For wrongs done to them a court of competent jurisdiction might at any time afford a summary relief, and that, too, without the intervention of a jury. This principle of the common law has never changed. It still governs the tribunals of England and the United States, because it is a prerogative power

of the court representing the State as *parens patriæ*. Such a court, therefore, can always inquire into the *status* of a person to inform its conscience, and, as we shall presently show, may determine the method by which it shall inform itself."

In the proposed amendments to the law of Maryland the court informs itself through the certificates of two physicians, whom it may also summon before it, and upon approval of their certificates, if the case *appears to the court* to be one demanding care and custody, issues an order of commitment. This for patients at public expense. In the case of patients committed at the request and expense of their friends, the court, if the certificates are satisfactory, both as to form and matter (reasons for finding the person examined insane), approves the certificates in writing "for the purpose of care and treatment."

Much of Maryland's jurisprudence is based upon the common law of England, the maxims of which, according to Judge Cooley (Principles of Constitutional Law pg. 7), "so far as they declared individual rights, were a part of the constitution of the realm and of that 'law of the land' the benefit of which was promised by the Charter of King John to every freeman." It is under this common law that the insane in England to-day are committed upon medical certificates, and not by jury trial, and under this same common law, were so committed at the time of the adoption of a constitution in many of the older States. And with varying modifications in method of procedure, based upon improved methods of care of the insane, the insane continue to be so committed to-day in many States, with no infringement of the rights of the citizen, without the intervention of a jury. Says Tiedeman (*op. cit.* pg. 109): "But where the confinement is on the request of relatives, whose natural love and affection would ordinarily be ample protection against injustice and wrong, there is a tendency to relax the constitutional protection, and hold that relatives may procure the lawful confinement of the insane, without a judicial hearing, provided there is actual insanity. The cases generally hold that extra judicial confinement at the instance of relatives is lawful where the lunatic is harmless, as well as in the case of dangerous lunacy, and it would appear that this is the prevailing opinion. If the objections to a judicial hearing were sustainable at all, it would seem that, in these cases of confinement on the request of relatives, there

would be the least need of this constitutional protection, particularly as the person confined can always by his own application, or through the application of any one who may be interested in him, have his case brought before a judicial hearing, in answer to a writ of *habeas corpus*."

There appears to be some lingering doubt in the mind of this writer, who, in the quotations which I previously made, takes a more advanced stand upon the question of the duty of the State to the insane than any writer upon the law with whom I am familiar, whether the detention of the insane, in compliance with the request of relatives or friends, is in accordance with that "due process of law" which is guaranteed by the constitution.

If such commitment and detention are in accordance with statutory provisions which bring the act, and the certificates upon which the act is based, within the knowledge of a court of competent jurisdiction, it would seem to be due process of law.

It was held in the *State vs. Allen* (2 McCord 56 Cooley's Constitutional Limitations, pg. 434, foot note), "that any legal process which was originally founded in necessity, has been consecrated by time, and approved and acquiesced in by universal consent, must be considered an exception to the right of trial by jury, and is embraced in the alternative "law of the land."

Mr. Justice Matthews, of the United States Supreme Court, uses the following language dealing with the term "due process:" "It follows that any legal proceeding enforced by public authority whether sanctioned by age and custom, or newly devised in the discretion of the legislative power, in furtherance of the general public good, which regards and preserves those principles of liberty and justice, must be held to be due process." (*Hurtado vs. California*, 110 U. S. 516—Cooley Princ. Constitut. Law, pg. 233 foot note.)

In the Lunacy Law of Maryland as amended we have a statute made in furtherance of public good, sanctioned in its main portions by age and custom both in the United States and England, which preserves all the principles of liberty and justice.

Under the law there is established a Commission of Lunacy with powers of inspection of all places where the insane are detained, to which commission the admission of every case to any institution in the State must be reported, with a statement of the form of insanity, its duration, cause, etc., etc., and to whom

every patient is by law ensured unrestrained access by letter. This commission is required to make periodical visits to all institutions for the insane and to enlist the services of the States Attorney to secure a hearing upon a writ of *habeas corpus* for any patient whose detention is by it considered improper. Even the character of the institution in which the insane are to be detained is subject to the judgment of this commission, except in the case of State and incorporated institutions, and a license must be taken from the commission to whom the plans of the buildings to be used must be submitted, before a patient can lawfully be received. What greater safeguards to the liberty of the citizen could be desired? How much farther will more cumbersome methods go toward carrying out the provisions of the Constitution and the Bill of Rights?

"Different principles," says Story, "are applicable in different cases," and it seems to me that the law is deficient indeed, and the courts lacking in resources, if out of the wealth of opinion ruling and precedent which the history of English jurisprudence affords, there cannot be brought forth some legal method, within all the restrictions of constitutional limitations, which shall permit an insane man to be restrained (not of his liberty, his disease has already taken that away) during the exigencies of care and treatment. To that end these amendments are offered, based upon successful practice in other States and in England, and surrounded with the safeguard of judicial knowledge and the knowledge and observation of a State Commission in each case, as well as that right of appeal which no law can take from the most humble citizen of the States.

If, as is now universally conceded, it is the duty of the State to provide for the dependent insane in the best manner suggested by advancing knowledge, and to regulate the care of all of the insane by establishing a system of inspection by a Commission or Board of Inspectors, who may make rules regarding the conduct of institutions, within certain limits, require periodical reports in all cases, and demand unimpeded access to all patients, the State may surely make laws regulating the commitment and detention of the insane.

"Legislation, which in carrying out a *public purpose*, is limited in its application," is not within the prohibition of the amendment (14th) if, within the sphere of its operations, it affects alike

all persons similarly situated (*Barbier vs. Connolly* 113 U. S. 27, Cooley, *Princ. Const. Law*, pg. 237, foot note). Certainly the legislation proposed is to carry out a public purpose, than which, none could be more beneficent, or surrounded, as has been shown, with greater safeguards.

DISCUSSION.

DR. ROHÉ: As a member of the committee of which Dr. Brush is chairman, I simply want to say that he has expressed the views of the committee very thoroughly. He has referred to one feature of the present law, that section which provides that no person shall be sent to the asylum at public expense without the inquiry of a jury into his condition. In this city (Baltimore) the effects of that law were recognized years ago, and the council passed an ordinance authorizing the health officer, when he thought it necessary to give a permit declaring that the individual was in such a condition as to require immediate care. That law would not stand five minutes in the courts, for no city ordinance can render ineffective a statute of the State. In our legislature we shall probably have no difficulty in passing any fair law for there is no opposition. Perhaps the best committee in our last legislature was the Judiciary Committee. It studied the law we proposed and it had its highest approval. Of course, as Dr. Brush has said, the legal mind is still wedded to the old notion that it is necessary to be declared a criminal before you can be placed in an insane asylum or hospital. We have fought against that notion as hard as we can, and shall continue to fight it and convince the public that the insane man is a sick one and should have treatment without having to be proved guilty of a crime.

DR. WILLIAM LEE: As secretary of the Lunacy Commission, I simply rise to state that we were thoroughly in accord with the provisions of the bill offered at the last legislature of Maryland which had for its object perfecting that part of the Lunacy Act which referred to the commitment and discharge of the insane. We are also, and have been for years, strongly advocating State care for the insane. You gentlemen know that the general community has to be educated up to such needs and requirements, and so the Lunacy Commission of Maryland has been for eleven years educating the public up to an appreciation that the poor insane are as much to be looked after as the poor sane. We have

had not only to include in this system of education the members of the legislature, but also the members of other influential bodies in order to carry out our ideas. The law presented last year was recognized to be exactly what was necessary, but on account of the lateness of the hour and the endeavor of each member of the legislature to get some pet measure through, this one was overlooked; but there is no doubt the next legislature will pass it unanimously.

DR. P. M. WISE: It is needless for me to add to what has been so well presented to the Association, except to refer in general to the operation of the new commitment law in the State of New York. The chief departure from the old law, which was in operation from 1874 to 1890 and which provided for a certificate of insanity by two physicians to receive the approval of a judge of a court of record before becoming effective, is in the requirement of a judicial committing order. A petition to the court by friends or a public officer is first required, the examination is then made and the patient—or if this is deemed unwise by the court, the nearest friend—must receive notice of the proceedings twenty-four hours in advance of the commitment, which becomes complete with the order of the judge. The chief criticisms that have arisen with experience relate chiefly to the delay in commitment caused by the premonitory notice to the patient. It has been found that judges do not consider it wise to serve notice to the patient in a large majority of cases, but the time cannot be shortened by waiving this provision. This delay, however, does not work all harm and no good. It has been found that fewer cases of delirium, acute alcoholism and other temporary mental disorders, are committed to the public hospitals for the reason that the enforced delay permit them to gain a better equilibrium, and the physicians to revise their diagnosis. As a result fewer cases are discharged from our public hospitals as “not insane.” It must be admitted that the new law works detrimentally to private institutions. Under the old law five days were permitted before the judge’s approval was required. Under the present law, as the judicial order is the commitment, it must be made before the patient is received. As a matter of fact and experience, no abuses were perceptible under the old commitment law, and more than sixty thousand cases were committed under its provisions without a single instance of serious abuse. In tem-

porary disorders not prolonged sufficiently to make the case a proper one for retention, this was promptly recognized and the patient discharged. Notwithstanding these embarrassments, the new commitment law in New York is working fairly well and it should not be amended without a fair trial, and proposed amendments should be formulated to meet an actual need and not a fancied wrong.

KATATONIA.
(KATATONIE OF KAHLBAUM—KATATONISCHE VER-
RÜCKTHEIT OF SCHÜLE.)

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HISTORY.

Katatonia, derived from the Greek word *Katartivw*, meaning "I stretch tightly," is a term applied to a certain group of psychical and motor symptoms presently to be described, which has often been considered as constituting a new and distinct form of insanity. There is, however, a great diversity of opinion in regard to this. This opinion was first held by Kahlbaum of Görtitz, who wrote and discussed the subject fully in a monograph which he published in Berlin in 1874. Dr. Kiernan, in an article on Katatonia published in 1882, mentions that Meynert, two years before Kahlbaum, described the syndrome as a "peculiar form of melancholia attonita," as "characterized by a series of fluxionary excitations, toned down by coexistent cerebral pressure, microscopic exudations, ventricular dropsy, and perhaps premature ossification of the sutures. From these will result forced and theatrical activities on the part of the patient. The convulsive state indicates the control of the irritative factors; the cataleptoid conditions, the triumph of the depressing factors. The ideas of grandeur following upon stupor are the results of ideas previously caused by fluxionary conditions."

Katatonia has been defined by Spitzka (1883) as "a form of insanity characterized by a pathological emotional state and ver-

bigeration, combined with a condition of motor tension." To this Dr. Nolan would add, "running a quasi-cyclic course of expansion, hysteria and stupor," stating that this "would help to define the disease in unmistakable terms."

Katatonía commences with headache, usually occipital, insomnia, a general feeling of mental distress and uneasiness, followed sooner or later by an attack of convulsions, epileptiform in character, or a condition of excitement, or melancholia agitata. This is soon followed by a condition of rigidity and immobility, the "attonita" stage. Recovery may now take place or the patient may drift into a condition of terminal dementia. As already stated, authors and alienists are not in accord as to whether katatonía should or should not be placed as a distinct form among mental diseases. The following are some of the most important opinions that have been expressed on this subject:

Dr. Arndt, in a paper read before the meeting of the Psychological Society of Berlin, 1874, said that he agreed to an extent with Kahlbaum's theories, but that he did not accept katatonía as a new form of psychic disease. He said that katatonía may have the most varying causes and relations and cannot therefore be considered a special form of disease.

Dr. Ewald Hecker says that Kahlbaum's statements and clinical diagnostic methods are excellent and reliable, and he discusses the subject in full, its etiology, symptoms, etc., and he reports two cases in a paper which he published in the *Allgem. Zeitschr. f. Psych.*, vol. 33, 1877. In the same volume of the *Allgem. Zeitschr. f. Psych.*, Dr. Brosius discusses this subject. He says that the "symptomatic entity" of the mental disturbances joined together under the name of katatonía is specific and that the separation of katatonía as a distinct form of disease is thereby justified.

Dr. James G. Kiernan in the same year, 1877, published an article on katatonía as a clinical form of insanity in the *American Journal of Insanity*. He considers that katatonía is entitled to a distinct place as a form of insanity so far as frequency of occurrence gives any right to the same. He gave in this paper an account of some thirty cases. In 1882 he published an important article on this subject in the *Alienist and Neurologist* and in 1884 a third article in the *Detroit Lancet*.

In 1878 Professor Westphal discussed this subject in a paper in

the *Allgem. Zeitschr. f. Psych.*, and said that clinicians, in the effort to study and separate mental diseases, are apt to be narrow in one way or another and that this was true of Kahlbaum in respect to his study of katatonia. He thought that Kahlbaum's katatonics were insane patients exhibiting variations in the manner of development of their insanity and variations in the subsequent course of its psychical manifestations. He did not consider the manifestations which Kahlbaum declared to be specific to be such nor that they were entitled to a place in the clinical group. He further said that Kahlbaum "mistakenly ascribes a spasmodic character to these manifestations."

In 1878 Dr. N. B. Donkersloot wrote an article in which he said that katatonia should be used as a name for a certain set of cases, the principal symptom being incapacity for action from disturbance in cerebro-motor centres, and stated that it often complicated nervous diseases, such as catalepsy, hysteria, epilepsy, melancholia with stupor, etc., so that to give it a special etiology and treatment was not well possible.

Dr. Tigges, in the *Allgem. Zeitschr. f. Psych.*, 1878, discussed one hundred and four cases of melancholia with stupor and said that he could not agree with Kahlbaum's scheme of katatonia, but that it stood on an equal footing with the other forms of melancholia and at times ran into them; that it showed the symptoms of such transition forms and was connected, as were the other forms of melancholia, in multiple ways with other psychical groups.

Dr. Von Reinecker, in a discussion published in the *Allgem. Zeitschr. f. Psych.* in 1880, said he did not believe that katatonia should be considered a distinct clinical form of insanity.

Dr. Sander, of Dalldorf, and Dr. Mendel, of Berlin, in the same article, expressed their opposition to placing katatonia in the list of separate mental diseases.

In 1881 Dr. Hack Tuke, in a paper on "Mental Stupor," published in *Trans. of Int. Med. Congress*, London, vol. 3, said he thought that Kahlbaum, in making the disorders of motility the essential part of the malady, carried his views too far. The morbid mental state conditioned the motor trouble, and it was right to take the former, not the latter, as a basis of classification. It was important, however, to bring the motor and psychical troubles into relation. In conclusion he summed up by saying that he

thought "the cataleptic variety of mental stupor (and probably other varieties also) was a condition to be regarded as caused by the exclusive direction of the mind upon a melancholy delusion, or, if this be absent, by brain exhaustion due to various causes calculated to paralyze volition and allow of involuntary action."

In 1881 Dr. M. E. Fink, in the *Allgem. Zeitschr. f. Psych.*, wrote an article recognizing katatonia and giving the differential diagnosis of it and hebephrenia. In 1882 Dr. Karl Laufenauer gave two cases of katatonia in the *Pest. Med. Chir. Presse*, and this author evidently accepted Kahlbaum's definition of katatonia. In the same journal, 1882, Dr. Eugene Konrad accepted Kahlbaum's theories in part, but thought Kahlbaum went too far in considering all psychoses exhibiting katatonic symptoms as phases of katatonia.

In 1883 Dr. V. Krafft-Ebing, in the second edition of his *Lehrbuch der Psychiatrie*, mentioned katatonia as a form of disease defined by Kahlbaum, made up of symptoms given by the author under a division of "Circulares Irresein." In the same year Dr. William A. Hammond read a paper before the New York Neurological Society in which he accepted Kahlbaum's definition of katatonia, and Dr. S. V. Clevenger, in an article in the *Amer. J. Neur. and Psych.* on "Insanity of Children," mentioned katatonia, apparently without questioning the validity of the name, and referred to Kiernan's observation of it in a boy of eleven. In this year Dr. Richard Neuendorff, in the *Centralbl. für Nervenheilk.*, reported two cases and evidently accepted Kahlbaum's definition of katatonia. In 1886 Dr. Knecht wrote on katatonia in the *Allgem. Zeitschr. f. Psych.*, and reported cases giving the differential diagnosis and also the report of two autopsies. In the same year Dr. W. P. Verity wrote on katatonia for the *Journal of Nervous and Mental Diseases*. He quoted Kiernan, with whom he evidently agreed, and mentioned that Clevenger expressed the opinion that katatonia "seems allied etiologically to some rheumatoid disease, though its origin may be in nerves or blood." He cited one case of his own. In 1886 Schüle in the *Klinische Psychiatrie*, Liepsig, gave an exhaustive and perfect picture of clinical katatonia and divided it into three varieties, the religious expansive form, the depressed form and hysterical katatonia. Clemens Neisser, of Stuttgart,

wrote on katatonia in 1887 and also furnished a valuable article on katatonia for Tuke's dictionary.

In 1889 Dr. W. Julius Mickle furnished a long and comprehensive article on katatonia in volume 12 of *Brain*. He believed that Kahlbaum has demanded for katatonia an application far wider than can be admitted, but conceded to it a "separate existence as at least a variety or sub-form, if not as a separate and distinct form of mental disease, for which last view there is much to be said." "At least as a symptom, assemblage or syndrome, the name katatonia will have its uses in mental medicine." He said that nosologically it should be placed as an appendix to the class of psycho-neuroses. There were elements in katatonia leading one to consider it equally well placed in the second great group of mental maladies (as classified by the author) namely, that in which hereditary influences have formed from ordinary neuroses, of "psychoses of hereditary or other morbid constitutional neurosis or mental degeneration, of defective organs, mental constitution or of incomplete or arrested brain development." Here it might stand between the class of periodical and circular psychoses on the one hand, and on the other, the adjoining class containing hebephrenia, paranoia, simple hereditary insanity, etc. He further stated that the views expressed by Drs. Seglas and Chaslin are partly similar to his own. These authors, whose writings on this subject are to be found in the *Arch. de Neurol.* for 1888 and *Brain*, vol. 12, do not accept katatonia as a distinct disease, but consider it a variety of melancholia, simple or sympathetic, with stupor more or less marked, perhaps more distinctly related to hysteria. Dr. Nicholas Ostermayer in the *Allgem. Zeitschr. f. Psych.*, vol. 48, expressed the opinion that clinically we must accept Kahlbaum's theories; and that while katatonia is probably not a frequently occurring form of psychical disease, it is not one of the rarest forms.

In 1892 Dr. Edwin Goodall, in the *Journal of Mental Science*, London, published a paper entitled "Observations upon Katatonia." He was undecided as to whether katatonia should or should not be considered a separate malady. Dr. R. Percy Smith in the *Journal of Mental Science* for 1892 cited a case of "so-called katatonia." He considered the term "katatonia" as dubious.

In 1894 Dr. E. D. Bondurant published an article on katatonia with six illustrative cases in the *Medical News*, vol. 64. He considered katatonia a convenient name for a "rare and interesting group of symptoms."

Clouston in his work on Mental Diseases, 1897, states that "katatonia is simply a variety of alternating insanity in which the functions of the motor-trophic centres are especially involved."

Bevan Lewis, in his text book on Mental Diseases, 1890, says: "The more closely we study these cases of katatonia described by Kahlbaum, the more convinced we are that we are not dealing with any distinct pathological entity, but with some of the multiple forms of hysteria. * * * * Melancholia attonita closely approximates to the state to which we now allude."

Conolly Norman, in a monograph on "Acute Confusional Insanity," states incidentally that katatonia is probably to be regarded as a type of the above-named disorder.

We thus see that katatonia has been described variously as a clinical entity, as a variety of melancholia, as a form of circular insanity, as a type of acute confusional insanity, as a species of hysterical insanity, and by one author (Schüle) as attonic mania.

A careful study of the subject as detailed by the authorities cited, together with observations of our own, give us the following facts in the etiology, pathology and symptomatology of katatonia.

ETIOLOGY.

One of the most important predisposing causes of katatonia is hereditary influence. Katatonics are often members of families showing hereditary psychic degeneration. Scrofulous and tuberculous diatheses are frequently predisposing causes. The other most important predisposing causes are age and sex, the majority of cases being youthful and belonging to the male sex. Students and teachers are said to be especially prone to have this trouble. The influence of stimulants may act as a predisposing or exciting cause. The principal exciting causes are masturbation, sexual exhaustion and excess, religious and emotional excitement, mental strain, worry, anxiety, syphilis; indeed, all of the usual factors in the causation of ordinary melancholia.

PATHOLOGY.

Kiernan found that the disease is most frequently preceded during infancy by a basilar meningeal process of a tuberculous character. Kahlbaum's post-mortems show evidences of a healed-up hydrocephalus and a basilar meningitis. Meynert's deduction from Kahlbaum's cases is that the disease has been preceded by a patho-meningeal process located at the base of the brain and over the fissure of Sylvius. Kiernan further says: "In a patho-psychological aspect the localization of the process would be over the base of the brain, in the fourth ventricle, and over the fissure of Sylvius." Dr. Julius Mickle says that the post-mortems show brain atrophy, anæmia, marked basal meningeal changes, or passive hyperæmia and cedema of meninges, all of which indicate a profound alteration of brain nutrition. The pia is at times found to be adherent in patches to the brain and superficial layers of gray matter are separated when the membranes are stripped off. These patches are situated at the anterior part of inferior mesial surfaces of cerebral hemispheres. The arachnoid is slightly thickened and opaque over the base of the brain and there is thickening and opacity over supero-lateral gyri.

We are inclined to believe that the more this class of cases is investigated the greater will be the accord shown with the pathological findings in melancholia.

Kahlbaum's theory of the cause of verbigeration was that it was a kind of co-ordinated spasm originating in the centre of speech.

SYMPTOMATOLOGY.

The symptoms of katatonia are essentially somewhat variable in nature. There is a tendency to change from phase to phase, often returning to a previous one as if by a sort of relapse. The earliest symptoms noticed are abnormal sensations in the head, pain in the occipital region, vertigo, insomnia, irritability, change of temper, general restlessness, a certain amount of gradually increasing melancholia.

The second stage may be ushered in with convulsions, epileptic or epileptiform in character, or the patient may become suddenly maniacal, or greatly agitated. The patient now presents the marked condition of melancholia. Muscular tension, or spasmodic movements, are present. It has been said that in about

fifty per cent. of cases there are spasmodic conditions of the most varied nature, often existing for years before the beginning of the actual mental disease. (Hysteria?) Rhythmical movements about the face and limbs are often seen in this and subsequent periods. These rhythmical motions or movements are always under the control of the will, thereby differing from those seen in chorea. The reflexes are increased. The delusions are usually of fear or self-accusation and may concern the commission of imaginary sins, masturbation, etc. Auditory and visual hallucinations of the most terrifying character are often present. Sometimes there is a condition of religious ecstasy or excitement, suddenly or gradually developed. Patient may have confused but expansive ideas of a religious or social order, and he may be given to elocutionary displays with much gesticulation. There is sometimes a tendency to talk and act theatrically. The patient is given to making pompous harangues, consisting of but fragments of sentences. There is a verbigeration or a repetition of unintelligible words or syllable-successions not belonging to any language, with an especial tendency to rhyming. These are often spoken with much effort, emphasis and forcibleness. There is a tendency to contradict, oppose and resist everything, to refuse food, resist being washed, dressed, etc. There is a peculiar erectness of carriage, slowness of movements and immobility of features, a pathos of expression in speaking and writing and a tendency sometimes to mystical language, together with the effort to discover mysterious allusions in the sayings of others. The characteristic katatonic condition of tension in psychical and muscular spheres may be observed in any stage, but it may be said here that the division into stages as attempted by some authors is not altogether practical or practicable.

In the so-called attonita stage there is rigidity and immobility, which is more or less complete. Catalepsy is often extreme. There is an absence of spontaneous movements, but when we attempt to produce passive movement there is a powerful resistance. The muscles are generally in a state of tension. Opisthotonos or tonic spasms are sometimes present. The tendon reflexes are often greatly exaggerated. There is a tendency for the limbs to remain for some time in the position given them, thus forcing the patient into uncomfortable positions, as in the condition of "*flexibilitas cerea*." The head may be just raised above the pil-

low, the thighs flexed on the abdomen and legs on thighs. This immobility is often interrupted by rhythmic monotonous movements incessantly repeated in an automatic manner. These stereotyped movements are called "Bewegungstereotypie." Another very important symptom is "mutism" or "mutacismus," or a pathological tendency to be silent. This mutism or dumbness alternates often with verbigeration and other varieties of repetition. Constipation is frequently present and occasionally retention of urine. The faradic irritability is, as a rule, normal; the galvanic is at times often diminished. "Stadia with obstinate taciturnity, confusion of thought and speech may occur in some cases." Dementia supervenes only slowly, and rarely becomes extreme. Dr. Julius Mickle has this to say of the grouping of symptoms: The order in which stages occur is irregular. The circular nature of the disease is extremely irregular or abortive. One or any of the stages is apt to be absent in a given case. There may be alternately:

A: { Stuporous-cataleptic phases and excited phases

or

B: { Depressed and excited

or

C: { Successively, melancholic-depressed
stuporous
excited
confused
depressed

or

D: { Convulsive phase followed by apparent temporary recovery,
then successively: { depressed and excited phases } in
depressed and hallucinatory } series
phases

The most frequent complication, whether preceding or following upon the appearance of the mental disease, is tuberculosis. The tendency, if recovery does not take place, is for the patient to drift into a condition of dementia or for phthisis pulmonalis to develop and carry the patient off.

There are many abortive forms of katatonia, which might be termed *formes frustes*, and it is in atypical cases which are so often similar to other varieties of psychosis that diagnosis is difficult. For our part we do not believe that all of the cases which have been recorded in literature are cases of katatonia in the strictest sense.

Katatonía has been divided into two forms, *katatonía mitis* and *katatonía protracta* (Neisser). With *katatonía mitis* there is probably simple cerebral anæmia or œdema, and with the disappearance of the œdema and a general constitutional improvement the katatonic symptoms gradually disappear. The *katatonía protracta* is a meningitic form, being connected with the remains of a meningitis.

Katatonía is not a common disorder. Bondurant gives its frequency one-half of one per cent.; Clevenger, one and one-half per cent., and Kiernan two per cent. We ourselves are inclined to consider katatonía as an extremely rare syndrome, taking it in its strict sense. It is a symptom-complex, any one of the manifestations of which is frequently to be observed in various forms of insanity, and this has doubtless led to the diagnosis of Kahlbaum's entity in cases which often prove by more exact limitations to be quite different from the true Kahlbaum type. We report in this paper four cases, the only ones we have met with in a considerable experience in large asylums for a period of fifteen years.

DIFFERENTIAL DIAGNOSIS.

The katatonic state can be distinguished from hebephrenia or the insanity of pubescence, in which, occasionally, cataleptic conditions occur, by attention being paid to the following symptoms: The delusions of the former are intellectual, commonly depressed, and vary indefinitely; the delusions of the latter are vague and stupid. There is seldom a spasmodic element in the insanity of pubescence and the serial phases are not present. The chief diagnostic difficulty lies, of course, in the differentiation of this syndrome from such cases of melancholia as manifest attonital or cataleptic states, but the presence, at some time in the course of the katatonic type, of cheerful or exalted and excited conditions, together with rhythmic gesticulations, attitudinizing and verbigeration would be distinctive. The *flexibilitas cerea* of katatonía sometimes differs from that occurring in melancholia attonita by not coming on in sudden and brief attacks of cataleptic or ecstatic character, but by lasting for a long time (for weeks). The katatonic syndrome is differentiated from hysteropilepsy by the different general history of the disease rather than by isolated symptoms. Chorea complicating insanity is

diagnosed by the peculiar involuntary and irregular movements of the former, as distinguished from the voluntary and often rhythmical movements and gesticulations of katatonia. Furthermore, insanity with chorea is not apt to exhibit such variety of phases. Narcolepsy shows none of the mental or motor symptoms of katatonia, but consists of periodical attacks of quiet slumber.

PROGNOSIS.

The prognosis should be guarded, as in any severe form of melancholia. Complete recovery is said to occur in only about three per cent. Recovery may follow immediately upon the stage of attonita, gradually or suddenly. Prognosis is rather more unfavorable if a state of excitement follow upon the attonita. This excitement may be interrupted by a new stage of depression. It may remit and the patient appear nearly well, but generally ends in dementia. If there is to be an unfavorable termination, periods of excitement and stupidity recur with increased frequency. Three-quarters of the fatal cases are said to die from tubercular disease. It may be here said that Kahlbaum himself was inclined to look upon the prognosis as favorable, which is rather inconsistent with his idea of an organic basis for katatonia.

TREATMENT.

Treatment consists in the main of following the indications common to melancholia, in paying attention to symptoms, administering tonics, sedatives and stimulants when needed. Faradization of the chest muscles has been recommended as a prophylactic against tuberculosis, though we confess to little faith in its value. Constipation should be combated by the administration of laxatives. It is often necessary to resort to artificial alimentation where the patient refuses food. Occasionally, though, the patient will eat small portions of food when he is alone. Retention of urine is occasionally present and may require attention. Amyl-nitrate is useful in cataleptic and stuporous phases. Hydrotherapy is valuable as a general tonic and stimulant. Naturally the moral treatment followed in institutions for the insane is of the greatest service. Intestinal anti-sepsis and the opium treatment will be found valuable in this as in other forms of melancholia.

As an appendix to this article we publish four cases that have come under our observation, together with our comments and conclusions.

CASE I.—B. R., female; age thirty-one; married, with four children; Hebrew; common education; born in United States; admitted to the Hudson River State Hospital in February, 1884; no heredity.

The first evidence of mental disturbance was in August, 1883, after the birth of her last child, which she nursed for two months, when she became sleepless, restless and inclined to refuse food. Soon she developed the idea that she would never recover, began to bemoan her condition, and said it was hard to die so young. There was complete anorexia. She took no interest in anything, became careless of her person and dress and negligent of everything in which she had formerly been interested. Three weeks before admission she became suicidal, spoke of it, and attempted to choke herself and to cut herself with glass. She would bite her care-takers, and took every means possible to make way with herself. Her menstruation was regular. There was considerable constipation. The case was regarded as one of puerperal melancholia.

February 11th, two days after admission, she tried to beat her head against the bedstead, said some one was killing her children and putting them in a box; said arsenic was put in her coffee and that her mother was in the asylum; was sleepless and had to be fed forcibly. She became rapidly worse during the next few days, went into a condition of noisy excitement, calling for her mother whom she believed to be in the building, mentioned her delusions of poisoning, beat and bruised herself against the bedstead, and refused all food. She was very suicidal. Her mouth and tongue became dry, she showed symptoms of exhaustion and was fed with the tube for a considerable period. She continued to refuse food, to resist all care strenuously, and to be desperately suicidal until March 15th, when she became cataleptic, with marked *flexibilitas cerea*; absolutely silent, noticing nothing, not even her husband who visited her; would swallow food put in her mouth; made no voluntary motions; pulse good; bowels moved by enemata; but began to wet and soil the bed, and as she grew stronger was looked upon as rapidly becoming demented. This state of catalepsy continued, with variations from time to

time, for a month or more, when she began to be destructive of her clothing, would strip herself naked, and was filthy in her habits. She remained in that condition, seldom uttering a word for months, until about the last of November, 1884, when she began to cry out loudly, "Bring me home to my children in New York," "Bring me home to my children in New York," reiterating this over and over from morning till night, and accompanying the phrase with rhythmic movements of the hands and arms as if she were waving them in the direction she wished to go. There was a rhythm in the days, too, for every alternate day she was quiet in her chair and would whisper. This continued without variation for some two months, during all of which time she was eating and sleeping well and gaining in flesh.

About the middle of January, 1885, her verbigeration took another character, the gesticulations remaining the same. She began to recite all day long, every other day, with great rapidity and with infinite variation in rhymes of unintelligible words as follows:

"Moccasins,"	"Tabies,"	"Jobis,"
"Voccasins,"	"Gabies,"	"Chobis,"
"Doccasins,"	"Habies,"	"Sobis,"
"Crockasins,"	"Sabies,"	"Pobis,"
"Lockasins,"	"Labies,"	"Tikater,"
"Tockasins,"	"Mabies,"	"Fikater,"
"Jockasins,"	"Kabies,"	"Sickater,"
"Hockasins,"	"Nobis,"	"Likater,"
"Babies,"	"Gobis,"	"Mikater,"

and so on, ad infinitum. She only changed to another word when the possibilities of rhyme were exhausted.

She was mentally confused. When asked why she made these rhymes said some one told her to, but this was probably an answer given because she could not explain why, for she had now no hallucinations or delusions. She was so confused that she did not feel sure it was her husband who came to see her.

A few months later she gave up the rhyming assonances and returned to the old phrase, with occasional variations—"I want to go home to my children in New York," "Won't I be glad when I get home to my children in New York," "What good times I'll have when I get home to my children in New York *
* * to my cosy home in New York * * * when I get into

the car which takes me to my husband and children in New York." This was the refrain for many months on alternate days, accompanied as before with rhythmic gestures of both arms in the supposed direction of New York. In the spring of 1886 on the quiet, alternate days she began to sew. She steadily improved in flesh and was looked upon as in a state of dementia. There was no appreciable change in her condition during the summer. The verbigeration and gesticulation alternated with quiet and industrious days until the autumn of 1886, when improvement began to manifest itself in every way, and in November she was discharged as improved and went home with her husband on trial. There she recovered perfectly so that not a vestige of the insanity remains, and is to this day in full charge of her household and family, as reported to us not long since by her husband.

In this case we have first, an ordinary suicidal melancholia, with delusions of poisoning, the killing of her children, etc., and hallucinations of taste and hearing, and possibly sight, rapidly becoming an aggravated case of melancholia agitata (of almost maniacal character) with a sudden lapse into a cataleptic condition lasting about a month, after which she was for some months silent, stupid, having to be dressed, undressed and cared for in every way, when she began to show symptoms of verbigeration and rhythmic gestures described above. During most of the long period presenting these symptoms she was mentally confused, but her mood was rather cheerful. She used often to smile when anyone would ask her why she talked in that way, and she seemed to take pleasure in what she was constantly reiterating.

CASE II.—M. S. E. Male; admitted to Hudson River State Hospital July 21, 1891; single; age fifty; merchant; native of New York; common school education; habits temperate; heredity, insane relations on father's side; on admission, physical condition feeble; alleged cause of insanity, ill health.

History: Patient said to have been naturally of a cheerful disposition, easily influenced, but up to fifteen years ago, to have been successful in business. At this time a change took place in his disposition; he became worrisome and fretful, hypochondriacal, neglected his business and was generally depressed. Ten months ago he gave up all work, said that he "could not walk, could not talk or care for himself." He became silent, melan-

cholic and pre-occupied. Three weeks ago he became greatly agitated and confused, and since then has paid no attention to anything said to him, and has not spoken except to constantly repeat meaningless syllable combinations, like "Oh, warmee," "Oh, warmee," "Oh, warmee," "Oh, huminum," "Oh, huminum," "Oh, huminum," "Oh, wow wow woro," "Oh, wow wow woro," "Oh, wody wody wody," "Oh, wody wody wody," "Oh, wody wody wody," "Oh, cody body," "Oh, kody body," "Oh, kody body," "Oh, wildy widdy," "Oh, wildy widdy," "Oh, hum yank-um," "Oh, hum yank-um," "Oh, hum yank-um." He would constantly repeat these words with greater or less rapidity in varying keys and with strange gesticulations and great earnestness of manner for fifteen or twenty minutes, when he would be silent for some hours and then start off with another combination. When spoken to he would become irritable and commence repeating some syllable combination. His appetite has been capricious. His face, head and neck at times are much congested, and at other times he is very pale. On admission was much agitated, moaned and wrung his hands, but refused to say anything intelligible; when spoken to would only repeat the above meaningless jargon, with gestures. Bowels are constipated, tongue is coated, pupils are dilated, heart's action weak.

July 22, 1891. Restless last night, moans constantly, pays no attention to what is said to him, but repeats his combinations, as "Oh, body body," "Oh, yum yank-um," etc., and with increased rapidity when an attempt is made to interrupt him.

July 23, 1891. Is in bed all the time in semi-cataleptic condition; lies in awkward positions; resists all care; bowels constipated, but would not submit to enema.

August 14, 1891. No special change in past month; in bed; keeps legs and thighs flexed; resists all care; never pays attention to any one; is always silent except when repeating his meaningless syllables, like "Oh, te it," etc. Bowels are obstinately constipated; frequently troubled with emesis; is cared for with difficulty on account of his persistent resistance; often moans and groans; often has rhythmical movements of upper extremities.

During August, September, October and November there was but little change in his condition.

In December he became stronger physically; was less resistive to care; would dress and undress himself; appeared to understand what was said to him, but never made any intelligible replies; but would frequently make harangues in meaningless syllables, repeating one combination from twenty minutes to a half hour and then changing to another.

January 27, 1892. Spoke to-day intelligibly for the first time since admission. Said to the attendant who was about to take him out to walk, "Don't let them take me out to-day."

January 28, 1892. Is again disturbed and excited. Verbigeration marked.

During February and up to the 25th of March he was much disturbed, often noisy for hours at a time. An almost persistent insomnia was present. The latter part of February chronic diarrhoea developed and persisted in spite of treatment.

March 25, 1892. He again spoke coherently and his verbigeration now stopped. Is very depressed and resists care. Has become thin in flesh and is quite feeble physically; is in condition of attonita; muscles in condition of tension; resists every change of position.

April 7, 1892. Has been quiet since last date but has resisted taking food and all care most strenuously; has had chronic diarrhoea and has been steadily failing for some weeks. Died this morning.

Post-mortem refused by friends.

CASE III.—W. J. Admitted to Hudson River State Hospital November 17, 1894. Age forty-four; male; married; railroad employee; native of Ireland; common school education; habits intemperate; heredity denied; physical condition on admission fair; alleged causes, intemperance and worry and anxiety on account of loss of position.

History: Six months prior to admission patient lost his position on railroad and was unable to obtain work and he and his family suffered much privation in consequence; worried much at not being able to obtain employment and gradually became depressed and despondent, and about four months ago attempted suicide by cutting his throat; the wound healed but he became more and more despondent and suffered much anxiety at not getting work; is now troubled with insomnia and headache. A few days ago he suddenly went into a condition of extreme excite-

ment, broke his watch, upset the table and was generally destructive and violent. He was taken to the lock-up for care. This condition lasted about three days when he became quiet and appreciated his condition.

On admission was profoundly depressed and indifferent to his surroundings; answered questions coherently but very unwillingly. After being here two days he went into a condition of melancholia agitata which lasted two days; he suddenly became stupid, confused and was in a condition of semi-catalepsy, refused to talk or to speak; after being this way for two days he again became greatly disturbed and continued so for five days. During this time he resisted all care; seemed utterly indifferent to his surroundings; at times was noisy; strenuously resisted all care and taking food, and it became necessary to nourish him through the œsophageal tube. He now became quiet, but continued to refuse food and was fed through tube nearly two months. He had delusions of poisoning and would rarely answer questions, but would frequently groan and moan.

On February 13, 1895, he had two very severe epileptiform convulsions. During February and March he refused food, often moaned and sighed, but had no conversation with any person and resisted strenuously all efforts at care. During April and May mutism was marked, patient lay quietly in bed and did not speak a word; resisted care; kept lower limbs flexed, and eyes shut half of the time; muscles were in state of tension and he resisted all care.

On June 10th verbigeration appeared. He kept repeating for hours, "Oh, Lord, what will I do?" "Oh, Lord, what will I do?" "Oh, Lord, what will I do?" but otherwise was mute and paid no attention to any one or to his surroundings, but always resisted most strenuously being changed, cared for or interfered with in any way. This condition continued with but little variation for six months. During this time he was visited repeatedly by his wife and family, but at no time did he pay any attention to them or hold any communication with them. He was continually in a state of attonita, but would often groan and moan and at times would repeat for a half hour or an hour at a time, "Oh, my God, what will I do?" "Oh, my God, what will I do?" "Oh, my God, what will I do?" with automatic gestures. The latter part of 1895 he developed phthisis pulmonalis. He was

in bed almost continuously during 1896 and his condition was that of attonita generally. His muscles were usually rigid and in a state of tension, his lower extremities flexed on the abdomen and the face on his chest; his lips pouting out; his eyes usually half-closed, paying no attention to any one but always making the most strenuous and persistent resistance of all efforts of care. He would daily have periods of varying duration of repeating in varying tones of voice, sentences such as, "What will I do?" "What will I do?" "What will I do?" "Oh, my God!" "Oh, my God!" "Oh, my God!" "Lord, have mercy on me!" "Lord, have mercy on me!" "Lord, have mercy on me!" etc., etc., etc. These repetition sentences varied from time to time. He is now in 1897, April, in the last stages of phthisis pulmonalis. He occasionally has verbigeration, but only once in three or four days. He is almost constantly in a stuporous condition. With the exception of his periods of repetition of words and sentences, he has been mute for more than two years and has held no communication with anybody. He is much emaciated and is steadily and slowly failing.

CASE IV.—D. M. Admitted to Hudson River State Hospital May 26, 1896. Male; married; age fifty-four; railroad employee; native of Ireland; common school education; habits intemperate; heredity denied. On admission, physical condition feeble. Alleged causes of insanity, intemperance and ill health.

Patient enjoyed fair physical health up to about twenty months ago, when on return from his work he complained of being sick and went to bed for a few days, and ever since then he has been more or less depressed and troubled with insomnia. He would often moan and groan all night; frequently wring his hands. He, however, worked in an automatic manner up to two months ago, but he took no interest in anything and on returning home in the evening he would moan and pace the floor until two o'clock in the morning, when he would lie down on a lounge for three or four hours. Was very hypochondriacal and restless; thought that everything he did and every move he made were wrong. His condition gradually became worse. At present he cannot sleep or rest day or night; paces the floor until his feet are blistered; rubs his forehead and wrings his hands until they bleed; refuses to go out of doors; says that he is miserable and wants to die; that there is no hope for him. After several hours of ex-

cited hand-wringing and pacing up and down he becomes more composed and says to his wife, "What a bad spell I have had." Has had severe occipital headaches for the past two years; often sees black specks floating in front of him and is troubled much with hearing imaginary voices and noises. Has numerous delusions of a depressing nature; is very self-accusatory; says that he has committed a mortal sin by practicing masturbation and that he must die.

During the first three days in hospital he was quiet, depressed, reticent; eyes had a furtive, shifting appearance; said he was in great mental trouble; had periods of walking the floor and rubbing and wringing his hands in a strange manner.

May 29, 1896. Had a convulsive attack this afternoon; afterwards was very confused and was put to bed. He now became much disturbed; moaned and groaned a great deal; was very emotional; often cried and wept; had periods of picking bed clothes; lay in one position and resisted being changed and cared for. This condition continued until August, when he began having periods lasting for some hours of being in a cataleptic condition. At all times he was depressed, but he would often talk and declaim, with gestures, about the money he had made and how successful he had been at times. No special change occurred in his condition during September and October. The fore part of November he became very confused, and the symptoms of verbigeration occurred now. Would sit or stand, and repeat, with monotonous and continued gesticulations, "I want to go home," "I want to go home," "I want to go home," * * * "I want to go home," "I want to go home," "I want to go home," etc., etc., etc.

During November and December verbigeration was very marked. Would frequently repeat, "I beg your pardon," "I beg your pardon," "I want to go home," "I want to go home," etc., etc., etc.

During January he was confused and quiet. Verbigeration less frequent. Fore part of February verbigeration again appeared, and often for hours he would repeat, "I am wrong," "I am wrong," "I want to go home," "I want to go home," "I do," "I do," etc., etc., with monotonous gestures. This condition continued during February and March. These periods of

noisy excitement would alternate with conditions of comparative quietude, when he would be in a semi-cataleptic condition.

In April his excitement increased, and he frequently while making his harangues, would pull or tear his ears in addition to his other gestures. Often repeats, "I know it," "I know it," "Kill me," "Kill me," "I should not be this way," "I should not be this way," "Why should I be so filthy?" "Why should I be so filthy?" Often seemed to be in great fear.

The patient is still under observation and is becoming very thin in flesh; often resists care; very emotional, and has periods of noisy verbigeration alternating with comparative quiet.

If there is one feature which impresses itself strongly upon the mind in reading the history of the four cases just described, it is that of the melancholia present in each and characteristic in every respect of common types of this form of insanity. The cataleptic and allied motor phenomena observed in katatonia are not infrequently observed in severe forms of melancholia where the terrible nature of the ideas seems to exercise a paralyzing influence over the whole motor mechanism, but the physiology of the symptoms is not yet understood. As cataleptic conditions are often noted in insanity associated with hysteria, in pubescent insanity, in epileptic insanity, sometimes in general paresis, and in hypnotic states, they cannot be regarded as constituting a distinctive feature of katatonia. The most important characteristic of the katatonic syndrome serving to distinguish it from melancholia with catalepsy would seem to lie in the verbigeration and rhythmic gesticulations. But even these symptoms are met with in other forms of insanity, and the automatic repetitions of set phrases with automatic, even rhythmical movements, though not so marked as in these extreme forms to which the name katatonia has been applied, are familiar enough phenomena in long-continued cases of ordinary melancholia.

CONCLUSIONS.

Our study of the subject and of our own cases leads us to the following conclusions:

I. Katatonia is not a distinct form of insanity, not a clinical entity.

II. There is no true cyclical character in its manifestations, hence it cannot properly be classed as a form of circular insanity.

III. It is simply a type of melancholia.

IV. It is not desirable, therefore, to retain the name katatonia.

V. The term "katatonic melancholia" or "katatonic syndrome" may be usefully retained as descriptive of melancholia with cataleptic symptoms, verbigeration, and rhythmical movements, but should be strictly limited to this symptom-complex.

VI. The prognosis in melancholia with katatonic symptoms is more grave than in any other form.

VII. The treatment of the katatonic syndrome is the same as for other types of melancholia.

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THE AFTER-CARE OF THE INSANE.

By HENRY R. STEDMAN, M. D.,
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For some time recently this subject has been engaging the attention of a special committee of the American Neurological Association, and it was while the writer was engaged upon the report embodying the results of their inquiries that the secretary requested him to prepare a brief paper on the subject for this Association as well. It has been largely through the generous and invaluable help of many members of this (The American Medico-Psychological) Association that the committee has been enabled to examine the question of the expediency and best methods of after-care for the insane in most, if not all, of its aspects; and therefore beyond an introductory account of the history of the after-care movement abroad and at home, it is impossible for the writer to do more than to reproduce their findings.

In the year 1841 an after-care association was formed in Paris for providing protection, assistance and homes, for poor insane convalescents, on leaving institutions for their treatment. It was founded by Dr. Falret. It was and is confined, however, to the department of the Seine. Its benefits are bestowed through three principal channels. (1) A central convalescent home, the inmates of which are exclusively poor and friendless female convalescents. Their sojourn is temporary, not exceeding five or six weeks, during which time they have the advantage of kindly ministrations, and on leaving they are invited to revisit the home. (2) Another form in which after-care is exercised is in the *Reunions du Dimanche*. That is, on Sundays the "Home" welcomes as guests a certain number of mental convalescents, who may desire to spend some pleasant hours in the institution, where they lived for a season. Their children are welcomed; husbands often accompanying their wives. They are hospitably entertained and attend chapel service, walk in the grounds, etc. In the year

1888, one thousand four hundred and forty-one persons, men, women and children, were received as Sunday guests into the home. (3) Assistance is also rendered to mental convalescents by visits to them in their own homes, especially in cases where occupation, illness or other causes, prevent them from coming to headquarters. The number of such domiciliary visits paid in that year was eight hundred and forty-five.

In England the subject did not come up until 1871, when an association called the Guild of Friends of the Infirm in Mind, *

* See Tuke's Dictionary of Psychological Medicine, page 563.

was formed, with the following objects:

1. Intercessory prayer.
2. Visits to friendless patients in asylums, in conformity with the regulations of the establishment.
3. Correspondence by post.
4. Seeking situations for convalescents.
5. Promoting convalescent homes for temporary rest after mental illness.
6. Maintaining friendly intercourse with discharged patient.
7. Recommending efficient attendants.
8. Furthering in any other way the interests of the infirm in mind.

Practically the association's work has been carried on, as regards personal visits and postal communication, in a single insane asylum—one of the largest in the kingdom.

Personal Visits. For many years friends in the neighborhood have paid personal visits to patients recommended to them as persons likely to be benefited by sympathy and kindly attentions. It is believed that much pleasure and comfort have been conferred in this way on many more or less friendless inmates by the welcome visits, friendly conversation and considerate gifts of benevolent neighbors, who, in many cases, have even invited patients to their houses.

Postal Communications. Many ladies at a distance have held postal communication with patients introduced to their notice, sending letters, magazines, flowers, postage stamps, small money orders, Christmas and other cards, etc. No trifling gratification has thus been afforded in the course of many years; many of these correspondents were entire strangers to the asylum and its inmates before entering into this charitable relationship.

After-Care. The after-care of mental convalescents, both as regards temporary "homes," pecuniary aid, employment, etc., has been of late undertaken by the After-Care Association, to which we shall refer later, but the "Guild" still recognizes objects (4), (5) and (6) as obligations of after-care to be reckoned among its duties.

The Guild's conditions of membership are: Communion with the Church of England and willingness to promote the objects of the association by prayer and help, according to opportunity. Its aid is, of course, available for *all* persons within the sphere of its work, irrespective of their religious denomination. The president is the Bishop of London and about four hundred and forty associates have joined. There is no subscription. The payment of one shilling on entrance is the only pecuniary requirement.

The subject was revived in England in 1879, when a paper by the chaplain of the Middlesex Asylum, Colney Hatch, on after-care, appeared in the *Journal of Mental Science*. In that year the first meeting of the After-Care Association just referred to was held. Its object was announced to be to facilitate the readmissions of female convalescents from insane asylums into social and domestic life. It appears that not until 1886 was there any practical work attempted. Working associates were then appointed, of which there are twenty, for the purpose of finding suitable homes for convalescents and visiting and reporting upon their temporary inmates. They also follow them up, either to the poor-houses to which they have been discharged or to their own homes. Homes have been found where convalescents have been boarded out, the patient's oversight being entrusted to some lady in the neighborhood, and the homes are inspected before any case is sent and afterwards by a voluntary inspector. Nearly one hundred cases were helped since 1886, while during the years of 1888 and 1889 forty cases were brought before the committee. In nearly every case assisted suitable employment was afterward found. A large number of cases not coming under the rules of the association have been helped to obtain relief through other channels.

In Switzerland there exists a system of after-care in several cantons. Aid is given to convalescents from mental disorders by endeavoring to provide occupation, and by pecuniary assistance

varying from fifty to one hundred francs. The persons discovering cases in need of treatment report to the secretary. A voluntary subscription of two francs annually from individuals, supports the institution fund. The societies are much valued by the medical superintendents of the Swiss asylums.

By recent direction of the French government, societies for the supervision and aid of insane patients on their discharge from asylums, are now being formed throughout that country. * In a circular sent four years ago to the different prefects, the Minister of the Interior called attention to the fact that asylum physicians often hesitate to set certain patients at liberty, whose mental condition seems to have so far improved as to make it useless to keep this class (or even those who have recovered) longer under treatment for fear that thus suddenly thrown on their own resources without oversight or, perhaps, without means of support, they will fall back into the old habits of life which gave rise to their insanity. This is particularly the case with those who, as often happens, are prevented from obtaining employment simply because they have been inmates of an asylum.

He advised that protective societies be formed for the oversight and assistance of such insane persons through the first phases of their return to ordinary life.

The Superior Council of Public Charities, in the course of an inquiry into the proposed revision of the lunacy laws of France, have recently formulated a series of recommendations regarding these Sociétés de Patronage (aid societies), which are in effect as follows:

That the Minister of the Interior urge the various prefects to encourage the formation of societies for the purposes above described, in every possible way, in all the departments of the country.

That it shall be the office of these societies to aid convalescent or recovered patients by the following means: Gifts of money, clothing and tools (this assistance to be weekly, monthly or quarterly), redemption of articles in pawn, payment of rent, admission to convalescent homes in cottages intermediate between confinement and complete freedom, or in hospitals or houses of refuge; finding situations for them in workshops, business houses, on farms, etc., and, finally, their supervision in whatever place they are employed.

* See *Archives de Neurologie*, 1892, pages 262-263.

That these societies be authorized to invest the savings of the insane and remit thereto the interest.

That the different societies be encouraged to co-operate.

The Minister expressed himself as heartily in favor of and ready to carry to consummation the views of the council, and called for speedy information from the prefects as to the result of the operation of the project as well as suggestions for its furtherance. In consequence, much has been done in France in this direction in the way of after-care since that time.

Until very recently there has been no attention paid in our country to the needs of the insane in this direction, and if there be any references whatever to the subject of after-care they are buried in the records of the proceedings of this Association in its earlier days. Dr. P. M. Wise, at the close of a suggestive paper on "Hopeful Recoveries," which was read at our annual meeting in 1893, alluded to the methods of after-care in England and France and most convincingly stated the need of such aid in the first weeks following the discharge of recovered patients from institutions for the insane.

In June, 1894, the subject was brought to the attention of the American Neurological Association in a paper by the writer on the "Management of Convalescence and the After-care of the Insane,"* from which the above description of work abroad is taken. At the close of the general discussion of the subject, a committee was appointed, consisting of Dr. C. L. Dana of New York, Dr. F. X. Dercum of Philadelphia, and the writer, to investigate and report to the association upon some feasible plan for the aid and supervision during the first month or two after their return home from asylums, of discharged pauper insane patients who are recovered or improved. The committee made an extended inquiry through a circular letter sent to a large number of representative alienists, neurologists and members of boards of lunacy throughout the country, of whom fifty—nearly all—replied to the series of questions asked. These replies are appended to the report of the committee* and are many of them of great interest in this connection, and as regards the establishment of State convalescent homes as an accessory provision for convalescent patients on their discharge from State hospitals for the insane.

* In the following July an excellent article on the subject by Victor Parant, M. D., appeared in the *American Journal of Insanity*.

* Published in the Transactions of the Am. Neurological Association for 1897.

The expediency and necessity of after-care was advocated strongly by a large majority of the correspondents, scarcely half a dozen dissenting, and the organization of after-care associations under private auspices was regarded as the best means for its accomplishment.

The conclusions of the committee are here re-stated:

1st. It is the general and well-nigh unanimous sentiment of those who are the most conversant with the needs of the insane in this country that measures should speedily be inaugurated for the temporary relief of discharged recovered, convalescent and improved insane patients of the dependent class by organized outside assistance.

2d. As a preliminary step inquiry should be made of all such patients individually before they leave the hospital regarding the mode of life, surroundings and occupation to which they are returning and appropriate advice given by a medical officer of the hospital. This precautionary measure is, we believe, too often neglected in large institutions for the insane.

3d. The legal provision, whereby an allowance of money and clothing is made in some States to each patient on his discharge, should be adopted by all.

4th. Outside assistance can best be promoted, we believe, through the medium of an after-care association, which, until its utility be proven, should be entirely a private undertaking. It should be organized like most existing charitable associations depending upon voluntary contributions. Obviously a large city offers the best field for starting and developing such a system.

5th. The special methods of after-care relief by such an association should be those employed by similar organizations in other countries—England, France, Switzerland—or a selection of the best methods of each. These may be modified later to meet special conditions. Such relief should (at present at least) be extended only to the class mentioned and be understood as temporary, covering only the first month or two following the patient's discharge. The work may be best done by associates or agents appointed for the purpose, who shall find suitable homes and situations for all proper cases. There should also be systematic supervision of the homes by agents, for the time specified, or until the patient seems to be under good conditions for taking up life and work again. This applies also to patients re-

turning to bad surroundings in their own homes. Reports should be made and records kept of each case.

6th. We believe it a duty which is especially incumbent upon the American Neurological Association to take up in this way the work of the hospital physicians and to see that the good accomplished in institutions be supplemented by proper outside supervision in appropriate cases, and we would urge its members to actively engage in the formation, in their respective States, of relief associations for the after-care of insane patients of this class on their discharge from hospitals, and to endeavor to enlist in the work the co-operation of all friends of the insane so far as practicable. To facilitate this, your committee would suggest that a brief compilation from all available sources of the methods employed by such organizations abroad, be authorized and published by the association for distribution to all who are interested in furthering this work.

7th. Regarding State convalescent homes, there is abundant evidence of the most authoritative kind of the advantages to follow from their establishment, but in our opinion the first reform in the order of precedence should be the general recognition of the necessity of separate hospital treatment of insanity in its *early and active* stage and the actual adoption of special provision for the "acute" insane as an indispensable step in the hospital treatment of public insane patients. Only when this result is reached should separate establishments exclusively for convalescents be added to the already large burden of expense for our dependent insane.

For discussion of after-care see page 64.

TRAINING SCHOOLS FOR NURSES IN HOSPITALS FOR THE INSANE.

By P. M. WISE, M. D.,
President New York State Commission in Lunacy.

That a prophet is without honor in his own country and his own time cannot be said of our honored ex-president who, in 1879, conceived the ideal training school for insane hospital attendants and subsequently under considerable difficulties and without precedent carried it to realization for the first time in any country. It is true that from Nightingale's efforts at the St. Thomas Hospital the general hospitals gradually developed efficient training schools; but their adaptation to insane hospitals presented difficulties that seemed insurmountable. It was the work of Dr. Edward Cowles in the McLean Hospital to illustrate his teachings. It is just to state that this example, supplemented by constant and indefatigable efforts to spread and teach the principles that must underlie successful efforts, and the spirit that must prevail and be sustained within the organization, has had the greatest influence in hastening the success that now appears to prevail in some degree quite generally. A few contemporary efforts were made to teach attendants by lectures and recitations in other institutions, but they failed of the success sought for by reason of immature and ill-digested methods. The speaker can refer freely to failures as he was a party to an unsuccessful effort.

The occupation of attending and nursing the insane has never, previous to the present epoch, been sufficiently attractive, nor has it offered inducements of a nature to attract to it persons capable of the training that now seems desirable and even necessary for the modern insane hospitals. Attendants, as a rule, belonged to the servant class. The motive could only be a philanthropic one when exceptions existed, else the service was one of necessity to gain a livelihood only, and consequently was made

a makeshift to more permanent and congenial employment. The future of an asylum attendant was not alluring, much less than that of the country school teacher. There was no potency in anticipation. Life in an asylum ward, with its humdrum routine, was not more attractive than that of a kitchen maid and about as remunerative. The foreign element in public institutions, in its paid and in its dependent population, was proportionate when the former was not in excess. This remains true at the present time of some institutions into which the spirit of reform has not yet filtered, but with the blessing of progressive enlightenment, an improvement in the character of employees entitled to the name of nurse may be anticipated.

The primary cause of failure in insane hospital training may be safely assumed to have been the lack of inducement sufficient to attract into the service of the hospitals a class susceptible of training or having the necessary preliminary education for it. To such a class there were open other avenues of occupation more alluring. The selfish motive of training nurses for the care of mental diseases only, which would require them to continue in the service of an institution, repelled the better class of applicants; and it was not until the hospital feature was vitalized and emphasized, and the training gave the student an anticipation of future usefulness outside the hospital, that improvement in the character of applicants for the training school became apparent. I believe I am stating the common experience.

To attract and retain desirable candidates for the training school, the recognition of training school students as a class is requisite. I believe this class distinction should be quite arbitrary. An inquiry extending over a number of years and applied to a large number of desirable persons at the time of their retirement from the hospital service, leads me to believe that without the grading of nurses apart from ordinary attendants, especially in the large public hospitals, improvement in the character of applicants will be very slow.

Among the chief reasons alleged by attendants of the higher order for leaving the service was the quality of their associates and their aversion to mixing with them socially. If they held aloof, they were assailed by subtle but nagging reflections which it is not within the power of any superintendent to prevent. A difference of title alone exerts an influence that may create quite

sufficient class distinction. In New York the superintendents acting with the Commission have created a schedule of employees which grades them to distinguish members of the training school from ordinary attendants, and when graduated from the training school they are scheduled as nurses and receive advanced pay. The result of this distinction has unquestionably been to attract into the service persons of higher grade. Any superintendent acquainted with the service in New York hospitals before and since this practice went into effect must admit this as an influence in improving the nursing service. It would be desirable when it is practicable to make a distinction also in living accommodations. A separate mess might be desirable. Social functions for students and graduates only, would increase the desire of attendants outside the favored circle to so improve and conduct themselves that they might also gain this privilege. There would be a constant example of a higher order of things available to the worthy and the seeker. I have known attendants whose preliminary education precluded their entrance into the class, stimulated with a desire that led them to study and an earnest effort to retrieve their wasted opportunities, in several instances with marked success. Doubtless, ability gained by such exertion is reasonably certain to be progressive.

It may appear a trivial question—that of considering all the enviroing influences which go to make or unsettle the prospective nurse, but I believe this consideration is necessary and human motives must be recognized and treated with an almost commercial tact. If the reasons for individual discouragement are secured, they can lead only to the conclusion that the true nursing spirit must be abetted by material things that will bring physical contentment as well as foster aspirations, and be free from degrading associations. This, I know, is often devoutly to be wished for where it is in great part unobtainable, but it is wonderful how much can be accomplished under adverse circumstances when the enthusiasm of the superintendent becomes contagious. The stimulation of a proper *esprit de corps* and attention to the individual welfare of the aspirant, are potent elevators of the nursing service and cannot be ignored.

In ward promotions also, graduates and advanced students should have a prior claim, even if a practical purpose can be better served in the promotion of an ordinary attendant. This

should be an established principle which should not be disregarded frequently. No particular claim for promotion by virtue of training school connection need be recognized until the student has successfully entered the second course of study. Students should not be permitted to pass beyond the primary course of study if they are unfitted for superior work by temperament, physical weakness or idiosyncrasy. Incompetency of any kind should be a sufficient bar to advancement, and where the latter is permitted it should be *per se* evidence of capability.

It is a mistake that has frequently been committed by hospitals in their primary efforts to establish a training school, to depend upon lectures by the staff as the basis of the school, and as its chief feature. These should always be considered as supplemental to class room and clinical instruction, and their value lies in giving the student an opportunity to receive another form of instruction upon subjects taught in other and, I believe, in more effective ways. It drills the nurse in exercising a careful observation and retention of spoken language, especially if the practice of note-taking be insisted upon. It trains the attention and it presents important subjects in a new and attractive manner. It has been the practice, and I believe it still is in a few hospitals, to depend wholly upon lectures for instruction. This may be very useful and the effort is not lost, but it does not constitute a training school by any means. It should not be called one, for such a designation would be misleading. A practice that had been followed to some extent by my associate medical officers, was to give instruction by lectures to attendants not in the training school, in order to make them more familiar with the rules of the institution and to demonstrate the proper custodial care of the mentally disabled, but these lectures were not considered as constituting any part of the training for nurses.

Another mistaken effort leading almost invariably to failure is the dependence upon medical officers for the required work of training. The successful school needs an organization in which medical officers should be a part, but not the larger part. It cannot be expected that they will spend a great part of their time at the bedside and in the class room with students when they have the medical care of a hundred and sometimes hundreds of patients. They can well supply the animation and the *vis a tergo* when the superintendent keeps the pot boiling, but the details

are beyond their possibilities and should not be dependent upon them. We are promised a manual of organization from a master, and the committee on training schools may report it at this meeting. In view of this, any suggestions I might offer now upon this feature would be superfluous. I will only emphasize what is truly important, in fact what is a *sine qua non* for a training school, which is a thorough organization, with the several departments of the school properly adjusted and harmonizing—working together.

The hospitalization of our asylums assumes the creation of hospital wards in their general sense, and where these are properly organized, clinical teaching in general nursing becomes a simple matter, and at once promotes the training school to its proper dignity. In our large public hospitals for the insane there is a sufficient number suffering from bodily diseases, which, if aggregated, would make a respectable general hospital. There should be a number of these wards adequate to permit each student three months' service under skilled direction in each year of the course. There is also a number of special cases requiring a special nurse, and these cases usually require skill both in mental and bodily nursing. There should also exist a sufficient flexibility of the ward service to permit the senior students or graduates remaining in the service to respond to outside calls. If the physicians in the community know that nurses can be obtained from the hospital, there will be a sufficient number of calls to provide an impetus for superior work and a knowledge of general nursing. Each nurse engaged in outside work will be an advertisement for the school, and will assist materially in diffusing a knowledge of the hospital's usefulness and beneficent work. It will also promote encouragement for superior persons to engage in the service.

In my introductory talk to those intending to enter the training school, I have usually described in considerable detail the chief distinction between a training school course in a general and in an insane hospital, in order to give the candidate an opportunity to retire before the course is begun. I consider this important, for, with all the instruction that may be given by circulars and letters, applicants misapprehend the purpose of the school. I believe that nurses properly trained in an insane hospital are better adapted for the care of most bodily diseases than nurses

trained in general hospitals. I do not hesitate to tell the class so nor do I hesitate to tell them why. As Dr. Cowles has said, the effect of the training in an insane hospital develops certain qualities of patience and tactfulness, which general hospital nurses often fail in, but which the general physician is quick to appreciate. This is developed by the tact and patience demanded in the care of nervous and insane cases, and the general hospitals have not the conditions for cultivating it as well. In order to prevent future discouragement and regret, it is well to have the student understand at the outset the particular advantages presented by the course to be undertaken. At the same time it is better to give frankly the deficiencies that are unavoidable for some branches, particularly surgical and obstetrical nursing, but to encourage the student in anticipating a post-graduate course to supply them.

For the foregoing reasons it is a serious error, as a rule, to draw teachers for the school from general hospital graduates. They have been taught too strictly objective symptoms, and there must be temperature, redness, pain or swelling to attract them. Psychic pain and psychic fever do not appeal to them, for they have not been taught to observe the subtle mind symptoms that really exist in some degree in nearly all serious diseases; whereas the special hospital nurse has lived in an atmosphere of disordered mind signs, and the recognition of nervous symptoms, their proper observation, care and record have become almost intuitive. It is better to select nurses who have developed in the right direction and have the general qualifications from the home school, and supply their deficiencies by liberally sending them to the needed post-graduate courses, keeping in their view the reasonable length of service they owe to the parent school.

I have failed to speak heretofore of the care which should be exercised in issuing certificates to nurses that graduate out of experimental schools. The work of the engraver is not required until the school is undoubtedly a success. A motive for undertaking the course should not be the possession of a beautiful diploma with a seal and a red ribbon attached. I have often been embarrassed by the application of persons for the nursing service in recent years whose qualifications I could not approve, who would indignantly show me a diploma which I had authorized

during my infant efforts at training a decade before, but had wholly forgotten. Unless the training is sufficient to produce a nurse in a general sense, the certificate should state what the possessor is capable of doing and should not certify to her proficiency in nursing. I am sorry to say that there are many of such unearned certificates floating about my own State.

Another error may be made in the enthusiastic early efforts in establishing a curriculum that will require the student to study theory to a needless degree. The safe limit is to teach only necessary things. In insane hospitals a natural tendency is to go too deep into psychology, and the effort to make the student comprehend subjective psychic states may be carried to excess and interfere with more important matters. The nurse requires only that knowledge of mentalization which will give her the capacity to recognize the commoner mind symptoms entering into ordinary clinical observation. Any attempt in the training school to make psychologists in a two years' course will lead to lamentable failure. The same precaution applies to any department of didactic teaching. There must be a careful discrimination of the border line between nursing and medicine. Of what possible value, may I ask, is the quite complete course in *materia medica* required in some general hospital training schools. For these reasons and others which I have failed to state, I believe the successful training school must have a well-digested curriculum established for the full course, with its limitations well defined, and should also have a complete calendar. In this way only can the ground be covered. Desultory teaching is impracticable where the time is so short and the student has other duties to perform, but the exact day and hour when each subject will be considered should be appointed at the beginning of the course for the year. This should apply not only to lectures and recitations but to clinics and practical work. Appointments should be observed with exactness and the same precise methods should be taught by school example as is expected of the nurse in her official work.

The superintendents and the State Commission in New York have taken concerted action toward establishing uniform methods in the training schools. Thus far there has been accomplished a uniform course of two years, with the use of the same textbooks, and progress has been made toward the adoption of a uni-

form curriculum. Students from all the schools are required to pass the same examination which is under the charge of a committee appointed by the board of superintendents. When the plan was put in operation an examination was made of all graduates from former training schools to ascertain their merit and fitness; and such as were found qualified were certified as nurses, and received that title to distinguish them from attendants. They also received additional pay. It cannot be anticipated that absolutely uniform efficiency will prevail in the several schools except as an evolution, but this may be hastened and directed by concert of action. There are local conditions which may retard or facilitate a desirable standard. These if unfavorable may be greatly modified if the presiding officer is determined and persistent.

DISCUSSION.

DR. H. M. HURD: I desire to state that Dr. Cowles has written me that he will not be able to present his manual at this meeting, but that he has made excellent progress upon it. He has been under a severe strain in building and organizing the new McLean Hospital. I think, however, you can confidently expect the manual by the next meeting.

I have been interested in this paper of Dr. Wise in connection with the conclusions we are reaching in general hospitals regarding the teaching of nurses. When training schools were first opened, it was customary to ask the physicians of the general staff to deliver lectures, because it was thought that many of the nurses could not apply their minds to abstract processes and sit down to learn from books. Hence, lectures were given, as they are still in many of our medical schools. This practice continues in many training schools. It is, however, becoming evident in all good training schools that more attention must be paid to recitation and class-room work, and that certain subjects must be taught almost wholly from text-books. I predict that within the next five years the curriculum will embrace more text-book instruction and less lecturing.

Another point which is to be considered is the necessity for a longer period of training. I know of many training schools with but a single year of teaching, which we all know to be too short. When a movement was first made in favor of lengthening the course to two years, everybody said there was great danger of

overtraining the nurse. Experience has shown that there was no danger of that, and it has since been found that two years are not enough. The best training schools are now adopting a three-year course, and within a short time there will not be a good hospital training school in the country with a course of less than three years. I believe that training schools in institutions for the insane must adopt a course of equal length. It is unfortunate that we cannot combine the teaching of nursing the insane with the teaching of general nursing. If some method could be discovered whereby water and oil could be mixed, whereby nurses beginning in an asylum could be interested in general hospital work and vice versa, much good would result. In the near future no hospital for the insane will be satisfied with less than a three years' training.

DR. GEORGE T. TUTTLE: I agree with Dr. Wise that the organization of a school is very important. A wrong beginning necessitates changes, causes loss of time and perhaps discouragement. Some one person under the direction of the superintendent of the hospital should be in charge as superintendent of nurses. The question at once arises whether one would better go outside his hospital for such an officer or take some one from his own institution. If the former course is pursued, it would be better to secure the services of a graduate of some training school of a hospital for the insane rather than of a general hospital, because the latter is not accustomed to the work that would be required of her and probably would not be successful. In my opinion it would be better to select a head nurse or supervisor who is already familiar with the hospital and its methods and send her to some school for a course of study.

The selection and instruction of such a person is a long step in the right direction toward the organization of a training school. Then, as Dr. Wise has said, it is further necessary that there be a large corps of instructors. Nothing is more important than this to give permanence to a school.

There is a movement now in the direction of an increased length of the course of study, and I agree with Dr. Hurd that three years is none too long, although it may be some time before it can be everywhere accepted.

It is universal experience that it is easier to establish and maintain a school for women than for men. Women are naturally

better fitted for the work, and there is a greater demand for their services after graduation. It is for them a profession, while few men nurses are regularly employed in private work, perhaps because they hold their services at such high rates. It may be that a greater supply would regulate the price and create a demand. The home treatment of the insane is certainly increasing, and it is rendered possible only by the fact that competent nurses can be obtained. It may be that in time this problem will solve itself and the male nurse will have a fair chance for employment if he has fitted himself to render proper service.

However that may be, we must instruct the men in the hospitals. There is quite as much need of intelligent service from them in our wards as from women. A few of them come to the McLean with the intention of studying medicine, and they find the instruction in the school and their work with the patients of great advantage to them.

Thus far we have not been able to keep so many of our graduates in the service of the hospital as we desire. Quite a number of the women go to the training school of the Massachusetts General Hospital each year for further instruction and experience in the care of ordinary acute diseases, and there is an arrangement whereby they receive a diploma from this school at the end of one year. While many go to the General Hospital, it is exceptional for one of their nurses to come to us. The general hospital nurse is not interested in the care of the insane, and if such knowledge is to be obtained, it must be had before she has become accustomed to the care of the acute cases of ordinary diseases.

I think the very best sort of a nurse, other things being equal, is one who has taken a two years' course in a hospital for the insane, and, after this, a year in a general hospital.

DR. H. C. EYMAN: I cannot do more than say what we have done at the Cleveland Hospital. In 1891 we organized, but unfortunately started wrong. We then thought the instruction could be carried on entirely by lectures. Now it is mostly done by the use of text-books. We use Dr. Wise's and Dr. Burr's, as well as other text-books. Our instructors, however, are taken wholly from our medical staff. We have four regular physicians who do the teaching. Of course, those who have graduated in the school act as clinical and bedside instructors. I have experi-

enced the same trouble spoken of—that of getting a less intelligent class of male than of female attendants. I attribute that to the fact that we give the females a pretty fair salary, and while the males get a little more, it is not a fair salary. Our course is two years, and we have graduated sixty-three nurses and the school has been a great advantage in raising the intellectual standard of our employees.

DR. ARTHUR W. HURD: The training school of the Buffalo State Hospital has reached the age of thirteen years, and while I was not connected with the institution at the time of its inauguration, I have been familiar with it for nine years and can say that no other one agency has been of such utility, not only for the benefit of the patients, but for the attendants and physicians as well. We are now called upon to supply nurses in many private cases of illness in this city and in Western New York, and are frequently asked for nurses for other institutions; and only recently one of our graduates was appointed head nurse in a city accident hospital over forty-six competitors. We have had the same trouble as Dr. Tuttle, viz., in retaining our nurses for ward service, as they are somewhat sought after. The methods of teaching, of course, have changed; there is less didactic work and more of text-book and recitation work.

The remuneration which they receive from private patients is allowed to the nurses wholly, and it is one of the rewards of the school. We have applications constantly from a number of medical students, and we have several now on duty. The whole tendency of the school has been to elevate the profession of nursing the insane to establish a certain *esprit de corps* unknown before. It results in our getting a much better class of applicants, which is of great benefit to the staff, as any one who has experienced the beneficial effects of teaching can testify.

ON MYXŒDEMA-LIKE CONDITIONS IN THE NEGRO.

By HENRY J. BERKLEY, M. D.,
Baltimore.

During the winter of 1897, in selecting the material among the idiots and half-idiots in the city asylum and adjacent almshouse for the class in psychiatry, I found a small number of atypical cases of sporadic cretinism among the white inmates, and among the blacks two or three cases of a peculiar thickening of local portions of the integument, strongly resembling myxœdematous swellings. As myxœdema in the negro race is at present an unknown malady, and universally denied, we concluded to make a further investigation of the entire population of about sixteen hundred souls in the two institutions, which included between three and four hundred negroes, a majority of these being mentally deficient. The search did not result in the discovery of more cases of cretinism among the whites, but in the addition to our stock of several cases of the local myxœdematous swelling in the blacks. To this material was subsequently added two further cases, one by the admission of a negro imbecile boy to the asylum; the other case was found in the city, a woman of middle age, who had had the tumefaction since childhood. These last two cases were under observation so short a time that it was impracticable to do more than make the diagnosis, but the examination given disclosed no marked variation from the more closely studied ones. Accordingly we had, at command, a total of eight cases of a peculiar thickening, local in character, of the skin, in the black race, identical in all respects with that present in cases of sporadic cretinism in the Caucasian race, but less diffuse in character. Four examples were discovered among the idiots, one in a case of parietic dementia in the third stage, one in a case of acute mania, one in a demented patient whose antecedent history could not be obtained, and one in an individual who exhibited no mental change beyond extreme slowness. With a single excep-

tion, an idiot girl, who might be placed more directly under the cretin type, the other cases showed the skin thickening very locally, and then only about the integument of the scalp and neck.

We have, therefore, a pathological condition differing considerably in its purely local characteristics from the ordinary diffuse myxœdematous swelling of the skin in sporadic cretinism, or from the myxœdema acquired from thyroid changes in later life, yet presenting perfectly the local characteristics of the malady; something I have found no description of in either text book or journal article, and especially interesting from the standpoint of the denial of the occurrence of myxœdema in the negro race.

A general examination showed departures from the normal in the thyroid gland always to be present; in seven cases it was either not palpable or below the normal in size; in one it was enlarged. The hair showed alterations in two cases, being coarse, thin and rough. The bones were abnormally broad in only one case, the idiot approaching a cretinoid state, but even in this individual there seemed to be no defect in the growth lengthwise, the subject being quite up to the average in height. While the development of the skull showed many changes and departures from the normal in the growth of the bones, the region of the fontanelles had no abnormalities to be observed.

The secretions of the skin did not appear to be altered from the normal, and even over the myxœdematous areas there was little of the dryness and roughness, usually one of the principal characteristics of the disease. Where there was local tumefaction of the skin the folds of the integument were obliterated.

The local swellings presented to the hand a firm inelastic feel, as if jelly had been forced under the skin. There was not a trace of pitting on firm pressure, but a quick rebound when the pressure was removed.

Changes in the general bulk of the body were confined to two cases, and only with these exceptions were the features broadened or coarsened. Pendulousness of the abdomen was only marked in one example.

In the majority of the cases, slowness of thought and action could not be judged by the usual standards, but in the single case seen in the city it was notably present.

Trophic lesions and enlargement of the lymphatics were not found. An unusual fetor was only present in one case.

INDIVIDUAL CASES.

CASE I.—Rebecca G., aet. 21, microcephalic type of idiocy, born in Baltimore. Height 165 cm., is well developed.

There is no family or previous history obtainable. Present exam. March, 1897.

Is able to talk considerably, and has considerable powers of attention. Has an occasional epileptic attack. Is neat and cleanly.

The skull is dolichocephalic and trigonocephalic, the circumference 48.5 cm., the cephalic index 76.2, the measurement over arch 31 cm., over antero-posterior diameter 31 cm.

The special senses are normal. The accommodative and light reflexes quick in responding to stimuli, while the consensual is slow. The deep reflexes are above par, the superficial normal.

There are no paralyses, defects in the vaso-motor condition, nor associated movement. The skin shows swellings of a firm jelly-like character over scalp, malar bones, and in less degrees about the legs; elsewhere it seems natural. The hair is coarse but not scant. The lips are slightly pendulous.

There is a slight degree of arterio-sclerosis. The thyroid gland is not palpable. Circumference of neck 31.1 cm. There is no exophthalmos. Heart sounds normal. The palate is flat, and there is a well marked torus palatinus. The teeth are regular, and not decayed.

The long bones, especially those of the legs and forearm, are very broad. The muscular development is good.

The urinary analysis showed a deficiency in the amount of urea, chlorides and phosphates, but no albumen or sugar.

September, 1897. The swelling of the scalp is not so marked as in the spring, but that of the face has rather increased.

CASE II.—Carrie A., congenital idiot, aet. 20, birthplace, Virginia. Height 166 cm. No family history obtainable.

Vocabulary very limited. Attention fugacious. Is untidy in her habits.

Skull, dolichocephalic, scaphocephalic. Frontal regions ill-developed. Circumference of skull 52 cm. Cephalic index 68.4. Measurement over arch 32 cm., over antero-posterior diameter 36 cm. The reflexes of all kinds are normal. In the right eye there is a staphyloma. There are no paralyses. Condition of arteries normal; the vaso-motor state fair. The bodily develop-

ment is good, the bones are not broadened. The thyroid gland is very small. Circumference of neck 33 cm. The palate is low arched, and the teeth are defective. There is no exophthalmos.

The deposits of myxœdematous character are located in the scalp and forehead, and are very small.

Urinary analysis showed the phosphates decreased, urea and chlorides normal. No albumen.

CASE III.—Eliza D., æt. 36, admitted to asylum in 1895, with general paralysis. Birthplace, Maryland. Height 160 cm.

The general family history is good. All her brothers are mentally healthy. Has had one child, and no miscarriages. Acquired syphilis five years previous to admission. One aunt has been insane. There were well marked delusions of grandeur before patient became demented. There are now only occasional attacks of excitement. The skull is dolichocephalic, regular. The cephalic index is 76, the circumference 53 cm. The measurement over arch 36 cm., over antero-posterior diameter 36 cm. Eyesight is normal. Accommodation and consensual reflex defective. Gustatory sensations defective. The deep and superficial reflexes are exaggerated. The gait is shambling. The vaso-motor state is poor. There is slight arterio-sclerosis. The skin is normal, except over scalp; where it is much thickened, and boggy to the touch. The muscular development is fair; the long bones are normal for the height. The palate is flat, and the teeth of the upper jaw have entirely disappeared.

The thyroid is small, hardly palpable. The circumference of the neck is 31.5 cm. There is no exophthalmos.

Urinalysis showed decrease of the phosphates and chlorides, otherwise normal.

CASE IV.—Kate S., dementia following chronic excitement. Forty-six years of age. Birthplace, Maryland. Height 151 cm. History entirely unknown. There is considerable mental enfeeblement, and the attention is fugacious. Is untidy.

The skull is dolichocephalic, scaphocephalic. The cephalic index 72.8, the circumference 49 cm. Measurement over arch 32 cm. Over antero-posterior diameter 32. The special senses and eye reflexes are normal, together with the deep and superficial reflexes. There is slight arterio-sclerosis. The physical development is fair. The palate is high arched; the teeth are normal.

The thyroid gland is small, the circumference of the neck 30.5 cm. The myxedematous deposits are confined to the scalp.

Urinalysis showed the phosphates to be very much decreased, urea and chlorides normal. There is a trace of skatol.

CASE V.—Mary P., aet. 40. No family history, and is very refractory.

Patient is greatly demented and untidy. The mental reduction followed chronic mania.

The skull is dolichocephalic, scaphocephalic. Cephalic index 76, circumference 51 cm. The special senses, eye reflexes and deep reflexes, as well as could be ascertained, were normal. The skin is natural, except over scalp where there are hard, jelly-like deposits. The thyroid gland is very small. Circumference of neck 33 cm. The palate is low arched. The long bones are natural in proportion to the height of the individual. The teeth are good.

The urine showed deficiency of phosphates and urea. Trace of skatol.

CASE VI.—Emma W., admitted for simple mania. Age 38. Height 169 cm.

Father died of dropsy, the mother of lung trouble. Was one of a family of fourteen children. Has had several living children, but no miscarriages. Is a beer drinker. After recovery from the maniacal attack there was no marked mental reduction. The menopause is about to commence. There have been no previous attacks of insanity.

The shape of the skull is dolichocephalic, regular. The cephalic index is 75.7. The cranial circumference is 56 cm. Measurements over arch and antero-posterior curves are 30 and 33.5 cm. respectively. There is nothing to note about the special senses, reflexes or physical development, or the osseous system.

There is a rich layer of fat over the whole body, and about the face, scalp and neck are diffuse boggy thickenings with the usual jelly-like feel. The arteries are normal. The thyroid gland is considerably hypertrophied. The circumference of the neck is 36 cm. The hair is very coarse. The palate is natural. The urinalysis showed no departures from the normal.

CASE VII.—James S., born in Maryland, seventeen years of age. Is the youngest of a family of eight. The father is an alcoholic. None of the other children are mentally deficient. Is half-

idiotic. Admitted to asylum April 26, suffering from an attack of acute mania. Has myxœdematous deposits about the scalp. Thyroid not palpable. Was removed by friends next morning before a complete examination could be made.

CASE VIII.—Martha S., æt. 38, cook. Born in Virginia. Has over the whole body an abundant layer of fat. About the face and scalp are extensive jelly-like deposits, and here the skin is much thickened. Hair is inclined to be thin. Is very slow in action and thought; is not intelligent. Thyroid palpable, but small. Gives a history of having had the deposits since childhood.

During March, April and May, the first five cases were kept under close observation (the sixth having recovered from the attack of mania, was discharged), and frequent urinary and blood examinations were made. The myxœdematous swellings in all of the cases neither decreased nor increased. A consensus of the urinary examinations during this time of Case I showed:

Average specific gravity, 1011. Urine always pale. Acid in reaction, no albumen or sugar. Urea 15 g. to liter. Phosphates normal.

Case II. showed:

Average sp. gr. 1007. Urine pale, acid in reaction. No albumen or sugar. No casts. Urea 12 g. to liter. Phosphates below normal.

Case III. showed:

Average sp. gr. 1012. Reaction acid, pale in color. No albumen or sugar. No casts. Urea 10 g. to liter. Phosphates below normal.

Case IV. showed:

Average sp. gr. 1011, straw color, no albumen, sugar or casts. Urea 15 g. to liter. Phosphates below normal.

Case V. showed:

Average sp. gr. 1013. Color yellow. Acid in reaction, no sugar, albumen or casts. Urea 10 g. per liter. Phosphates varying, sometimes below, sometimes normal.

A blood examination on April 15th gave the following results:

Case I Hemoglobin (Gower's hemaglobinometer)	92%	Red corpuscles	3,552,000
Case II	90%	" "	3,387,150
Case III	97%	" "	4,110,000
Case IV	98%	" "	4,182,500

Case V. became totally unmanageable and had to be abandoned.

On May 22nd the diet remaining the ordinary house diet, Case I showed 4,879,680 erythrocytes, and the differential count, polynuclears 68.39%, lymphocytes, the small ones largely predominating, 23.24%; eosinophiles 6.82%, transitionals 1.28%. A very few red cells were below the normal in size. No nucleated red corpuscles were found.

Case II gave erythrocytes 4,800,000 per c. m., and the differential count, polynuclears 50.09%, lymphocytes, the small ones predominating in the proportion of 6 to 1 of the large, 39.16%; transitionals 2.15%, eosinophiles 8.25%, and myelocytes 60.35%. There were no departures in the form of the red cells.

Case III gave erythrocytes 4,854,000 per c. m., and the differential count showed polynuclears 73.01%, lymphocytes, the small ones predominating in the proportion of 4 to 1, 19.79%; eosinophiles 5.54%, transitionals 1.35%. The red cells showed no departures from the normal.

Case IV gave erythrocytes 4,998,000, and the white differential count, polynuclears 44.24%, lymphocytes 52.88%, the small elements predominating in the proportion of 8 to 1; transitionals 1.02%, and eosinophiles 1.86%. The red corpuscles were perfectly normal. The urinary examinations did not differ essentially from those previously made.

In order to determine, if possible, whether the deposits about the scalp and neck of our cases were truly of a myxedematous nature, it was determined to place the four manageable cases on some preparation of the thyroid gland. The preparation of Fairchild Bros.' was chosen, as being freer from products of decomposition than any of the others, and on June 2nd they were all placed on a single daily tablet of the desiccated gland. Previously notes on their general condition, temperature, pulse, respiration were made, and thereafter throughout the course of the experiment continued twice daily. The treatment lasted from June 2nd to July 10th, when it was discontinued. At the end of the fifth day two tablets were given, on the tenth day three were administered, and after the nineteenth day, with the exception of Case III, all received four tablets per diem.

Summarized the results read as follows:

Case I. On June 2nd the general condition of the patient is excellent. Tem. 98.5° P. 80, R. 22. The next morning T. was 98°, P. 90, R. 24. At the end of the second day the T. had risen to

99°, and thereafter fluctuated between 98.5° and 99.2°, until four tablets were administered, when there was a descent for four days to 97.8°, and afterwards a normal temperature to the end of the experiment. During the administration of the three daily tablets, the pulse varied between 68 and 82; when four tablets were given it rose to 96 beats, and then slowly declined with a maximum variation between morning and evening of 10 beats. The R. ran unevenly throughout the experiment, varying from 20 to 28, the maximum being reached on the administration of the fourth tablet.

After the thyroid had been administered five days a change was noticed in the mental disposition of the patient. She became brighter, more than usually cheerful, and moved about more than was customary. About the eleventh day the face was noticed to be a little puffy, and so continued until the end of the thyroid administration. The facial swelling never, though, acquired the consistency of the deposits in the scalp. On the eighteenth day the patient exhibited considerable mental and motor excitement, though not sufficient to cause the withdrawal of the drug.

June 22nd a blood examination gave the following results:

Differential Count.			
Red corpuscles.....	4,976,000	Polymorphonuclears	63.15%
White "	8,140	Large Mononuclears.....	6.60%
Hemoglobin.....	95%	Small "	18.33%
		Transitionals	3.96%
		Eosinophiles	2.79%

The urine at this date gave the accompanying reactions: Color, straw; sp. gr., 1013, acid; urea 9 g. to liter. Albumen and sugar, none. Phosphates earthy and alkaline normal. Chlorides normal. On July 5th the sp. gr. had risen (diet remaining the same) to 1018, urea to 12 g. per liter, the alkaline phosphates had diminished, while the other constituents remained unchanged. On July 10th the urea had increased to 20 g. per liter. The cutaneous transpiration is increased, owing, probably, to the warmer weather. The myxœdematous condition about the scalp had by this date perceptibly decreased, so much so, indeed, that great folds of the scalp-skin appeared when the skin was slightly compressed between the fingers, a condition that could not be obtained before the thyroid administration. (Photo. 1.)

Case II. When thyroid administration was first begun the physical condition of this patient was excellent. T. 98° , P. 80, R. 18. Like Case I the tem. and respiration at first sank, the one to 97° , the other to 70 beats, while the R. rose very slightly. Thereafter the T. rose slightly, averaging 98.4° , and only after the dose was increased to four tablets daily did it reach 99° . The pulse averaged 90 beats until July 5th, when it sank to 70. The R. showed some peculiar characteristics, sinking on July 1st to 11 in the morning, and rising to 26 in the afternoon; the average change being 17 morning, 22 in the evening.

By the eighth day of the administration, the mental characteristics of the patient altered slightly; she became more lively, but had no well marked excitement. The myxedematous deposits on July 10th are slightly altered in volume. The secretion of the skin increased.

The blood examination June 22nd gave:

Red corpuscles.....	4,592,000	Differential Count	
White "	6,500	Polymorphonuclears	78.10%
Hemoglobin	95%	Small Mononuclears.....	17.89%
		Large "	4.65%
		Transitionals.....	2.46%
		Eosinophiles.....	2.46%

The urinalysis June 21st gave: Color, pale straw; sp. gr., 1015; acid; urea 11 g. to liter; chlorides, sulphates and phosphates, normal.

On July 3rd: Color, amber; sp. gr., 1024; acid; urea 22 g. per liter; chlorides, phosphates and sulphates, normal. Sugar and albumen, none. On July 10th the quantity of urea was 21 g. per liter.

The condition of the patient after the experiment was completed, rapidly returned to the usual state; indeed the treatment had little apparent effect beyond removing some of the myxedematous deposit.

Case III. June 2nd; patient in fair physical condition; T. 97.8° , R. 24, P. 80. For three days after the commencement of the thyroid administration, the T. continued to be a little over 99° , and then for four days ran below 98° . After the administration of the second and third tablets daily, it passed the 100° line, and continued between 99° and 100° until July 6th, when it dropped to 98° . The pulse gradually ascended, reaching its



PHOTO. I.—Showing the condition of the scalp after the administration of the thyroid extract.



PHOTO. II.—Showing the condition of the scalp after the administration of the thyroid extract.

acme on June 12th (100), and then remained steadily between 90 and 100 beats, until July 5th, when it dropped to 80 beats. The R. varied between 24 and 30 during the whole experiment.

The patient is much reduced mentally, being in the third stage of general paresis, but brightened up very much during the thyroid administration, became talkative, and for the time being was very much improved, and indeed retained some of the gain for several weeks. There was no unusual motor excitement. The boggy myxœdematous scalp greatly lessened in tenseness, and on slight pressure deep folds may be made in the skin of the scalp, a condition that before the administration of the thyroid was impossible, to nearly the same degree. (Photo II.)

On July 25th the blood examination gave:

Red corpuscles.....	4,212,000	Differential Count.	
White "	10,000	Polynuclears.....	82.42%
Hemoglobin	90%	Small mononuclears.....	10.48%
		Large "	3.60%
		Transitionals.....	2.18%
		Eosinophiles.....	1.31%

A urinalysis June 21st gave: Color, straw; sp. gr., 1016; react. neutral; urea 9 g. to liter; chlorides and sulphates normal; earthy phosphates diminished; alkaline phosphates increased above normal; sugar and albumen none. Calcium oxalate crystals were found during the microscopic examination.

On July 3rd the result was: Color, amber; sp. gr., 1009, faintly acid; urea, 8 g. to liter; chlorides and sulphates normal; earthy phosphates diminished; alkaline normal. A trace of indican. The amount of urea on July 10th had increased to 21 g. per liter.

Case IV. Physical condition of this patient at beginning of the experiment fair. T. 98.2°, P. 80, R. 20. The T. on the second day increased to 99°, but immediately fell to 97.5°, and so remained for some days, but on June 9th, after the administration of the second thyroid tablet, rose again to 99.2°, and so remained until after the administration of the third tablet (June 19th), when it fell to 97.4°, and remained thereafter between 98° and 99°. The pulse rate followed closely the temperature, reaching its maximum, 100 beats, on the increase to the third and fourth tablet, and decreasing again as soon as the system became accustomed to the drug. The R. varied between 16 and 20, the maximum more often being in the morning than in the evening.

On June 26th the blood count gave:

Red corpuscles.....	5,422,800	Differential Count	
White "	6,500	Polymorphonuclears	52.4%
Hemoglobin.....	95%	Small mononuclears.....	28.0%
		Large "	6.43%
		Transitionals.....	2.9%
		Eosinophiles.....	.65%

The urinalysis June 21st showed: Color, light reddish brown; sp. gr., 1013, faintly acid; urea, 6 g. to liter; chlorides and earthy phosphates normal; alkaline phosphates and sulphates somewhat diminished. Microscopically there were numerous red corpuscles found; a few leucocytes, and vaginal epithelium.

On July 3rd: Color, pale straw; sp. gr., 1015; acid; urea 9 g. per liter; chlorides, earthy phosphates and sulphates, normal; alkaline phosphates diminished. No red corpuscles were found in this specimen, showing the hemaglobinuria to have been transient. On July 10th, urea 10 g. to the liter.

Before the treatment was inaugurated, patient was very much demented, quiet, indolent, seldom speaking to anyone. During the administration, she became much brighter, talked more intelligently, and has remained to the end of September brighter than formerly. The myxedematous deposits decreased considerably during the treatment, only to return to their former state after its discontinuance.

The results obtained by the administration of the thyroid extract proved fairly conclusively that the jelly-like thickenings of the skin of the superior extremity, in the four cases, was of the same general nature as that in ordinary myxedema; in other words, that the effect of the administration of the dried thyroid gland was to remove it, in part, for the time being. It was also rather interesting to note that all these cases improved mentally during the period of administration, and did not return to their customary state until some time after it had been stopped. No ill effects were noticed from the action of the drug during the administration, as so often occurs in cases of ordinary insanity.

In view of the previous blood examinations in myxedema by Kræpelin, Schmidt, Laache and others, we confidently expected to have more decided results from this part of the study than was actually obtained. Three of the subjects at the beginning of the investigation showed a moderate eosinophilia, which soon disappeared. One had a lymphocytosis of moderate degree.

The hemaglobin percentage, however, excites more interest, standing throughout the examinations much higher than one could expect from the diet and unhygienic surroundings of the patients, the latter being entirely due to overcrowding.

Contrary to the observations of Kræpelin in myxœdema, absolutely no abnormalities were ever discovered in the shape or diameter of the red cells of any of the patients.

The variations in the excretion of urea during the several months the patients were under observation is worthy of notice. In all of the several cases, during March, April and May, the amount was subnormal, averaging in the four most tractable subjects only 13 g. to the liter. During the early part of the thyroid administration it declined to only 8.75 g. per liter; then in the middle portion it rose to 12 g. to the liter, and at the end of the investigation to 18 g. per liter, but, where previously all the cases had been below the normal, two now showed a slight excess, one the normal quantity, and one one-half of the normal. On September 23rd the urea excretion had again fallen below the normal, now averaging only 8.38 g. to the liter. During the whole course of the investigation the diet of the patients was but slightly varied.

I am exceedingly indebted to Dr. Knapp, the resident at the asylum, and to Dr. Elting, for many of the blood and urinary examinations and for their careful observation of the cases.

ANOTHER CHAPTER IN THE HISTORY OF CANADIAN JURISPRUDENCE OF INSANITY.

By DANIEL CLARK, M. D.,

Medical Superintendent of the Hospital for Insane, Toronto, Ont.

Two years ago the writer was given, at Denver, the opportunity to present to this Association his records of a number of criminal trials in Canada, in which the plea of insanity was set up, and at which he was a witness.

Since that time he has had the misfortune to be an advisor and witness at five additional criminal trials, in which the same plea was made on behalf of the defence.

It is not his intention to weary the members with details, but rather to give a summary of the salient points in each case.

It is to be hoped they will prove interesting, not only as cases in jurisprudence, but also from the point of view of medical psychology.

It is but fair to say that in all the cases doctors differed with that spirited independence which is so conspicuous in courts of law and which often gives rise to courtly sarcasm and forensic irony.

Lawyers may differ in their opinions of law and justice, theologians in religious polemics, but the physician is not supposed to have a mind of his own in the most occult and abstruse of all matters of human knowledge and experience. It is only by means of the jurisprudence of insanity that we can ever expect to have rectified the false metaphysical moral test of insanity, which has blinded legislatures to the force of arguments based upon the experience of medical men, who have to deal with facts presented daily to their observation.

REGINA VS. VALENTINE V. C. SHORTIS.

Valentine V. C. Shortis was the only child of wealthy parents in Waterford, Ireland. He was nineteen years of age when he came to Canada in 1894. He was temporarily engaged in a cotton

mill at Valleyfield, in the Province of Quebec, and was discharged after a few months' trial as incompetent. He, however, was on good terms with the employees and often visited the mill after his dismissal. The only one he expressed antagonism to was the manager who dismissed him, but he never did any violence to him.

One evening on the twentieth of March, 1896, he was present in the mill office with a number of others while \$15,000 were being assorted for the payment of mill hands on the next day. All the money was divided and put in small tin boxes, ready to be paid out, except \$1,500 which were lying on the desk. The treasurer had a revolver loaded in his drawer and Shortis had also a small revolver loaded on his person, hanging by a string under his arm pit, which he usually carried about with him. As the revolver of the treasurer was different in construction from what he was accustomed to see, he asked to be allowed to examine it. This he was permitted to do. He took it apart and cleaned it while the assorting of the money was going on. Suddenly he commenced firing at persons in the room. The first he fired at was not the treasurer, who had the money in possession, but another man sitting near by, whom he wounded in the face. The second shot fired was at a man in the telephone box. Him the shot killed at once. The treasurer then seized the money on the table, which the prisoner made no attempt to take, and ran to the safe. Shortis fired at him but missed; he shut the safe door behind him and was secure from harm. Before this retreat the prisoner fired a second shot at the wounded man and treasurer together, while the latter was holding the head of the wounded man, but missed them. The wounded man fled into another room and fastened the door, but it was burst open by Shortis, and again this man was fired at. The shot passed through the chest; he, however, recovered from the face and chest wound. Shortis met the night watchman and killed him with one shot. Five persons were fired at. Two were killed and one dangerously wounded. He made no attempt to escape, but remained in the mill and when he was captured made no resistance, although he had a loaded revolver in his hand. His only remark was, "I want to give myself up, here is my revolver; I do not know why I killed these men." After the revolver was given up he said, "Shoot me, or lend me your revolver and I will shoot myself."

This was two o'clock in the morning and hours after the shooting took place.

Shortis all his life had a perfect mania for guns or revolvers, and was allowed to carry them from childhood upwards.

I cannot do better than quote the following summary from the charge of Judge Mathieu to the jury at the trial to show his conduct in Ireland:

"He was a pupil of the Christian Brothers at Waterford, Ireland, for five or six years. There it appears, by the evidence, that he was always very singular and restless. He was exceedingly impulsive and spasmodic in his actions. He had always foolish tricks. He used to laugh boisterously. He was a source of infinite trouble. He would stick steel pens in the heads of his comrades. He would constantly have rows with boys, and he would not be allowed to play with them without having a person to control him. Coming from school he would set the boys to fight and would fight himself if they did not do what he told them. Once he attacked a number of soldiers with stones. His intelligence with regard to studies was weak. He was considered a weak-minded boy.

"He had also a private teacher who, it is said, could hardly teach him anything. There were only two subjects he could learn; they were the French language and chemistry. He was fond of chemistry and especially of the experiments.

"Once, at races that had taken place, he drove, in a reckless way, passing through a crowd of people, and struck one man on the head with a stick. People threw stones at him, but he drove so fast that they did not hit him.

"One day a man engaged by his father was carrying a bundle of hay on his back; the prisoner fired a shot with his revolver at the bundle of hay, and then laughed and clapped his hands.

"Three or four years ago, a painter was painting a landing stage on the river. He had a number of planks tied together and floating on the water. He was on the planks, painting. The prisoner went down with the painter on the planks, cut the twine and let the planks go adrift. Shortis was on a single plank and the painter on two or three of them. People had to throw a rope to them to get them out on the stage. There was great danger of both the painter and himself being drowned, on account of the strong tide of the river there.

"About the same time, three or four years ago, he was riding his pony in his father's field, and suddenly he stopped his horse and began to fire at a man who was working there. He fired five or six shots. The man had to run away.

"About eight or nine years ago, he went to Thomas Kearney's place with a revolver. Kearney asked him if the revolver was loaded. The accused just turned round and fired at three children that were sitting on a wooden bench on the opposite side of the road, at a distance of about fifteen yards. One of them, a four year old little girl, began to cry. Her arm was marked. Kearney asked him why he did that, and he said he thought it was his (Kearney's) sister. After that he seemed sorry for it.

"About two years after, the prisoner struck George Moore's dog with a cane. Moore told him: 'Why did you do that, you puppy of a whelp,' and Shortis fired at him with a revolver at a distance of about twelve yards. Moore was protected by a tree.

"About the month of June, 1893, there were bicycle races in the park at Waterford. There was a discussion as to the best method of keeping people off the green in the center round which the races were run. The prisoner happened to be standing by and heard what was going on. He went away hurriedly and came back in a few minutes with a brace of revolvers in his hand. He said he would keep everyone outside the track, and that he would blow the brains out of any one that attempted to come inside.

"In the summer of 1893 he was in a shop with a friend. That friend reproached him for something that he had said and scolded him for his act. The prisoner said to him: 'If you say that again I will blow your brains out.' He took out a revolver at the same time and pointed it at him. There was a stranger in the shop at that time. He struck the prisoner with a stick and knocked the revolver out of his hand. His friend then left the shop.

"In the same summer of 1893, Shortis went to Waterford Boat Club with a rifle in his hands, and there he said to the caretaker of the club: 'There is a shot, and, by God, I am going to have it.' The shot was a lady and gentleman who were about three hundred yards from where he stood. He was prevented from shooting by the caretaker of the club, who said he would have done it if he had not prevented him from doing so.

"By the evidence taken in Ireland, it is shown that he was al-

ways peculiar, boisterous and very eccentric in his ways. At times he was very strange, and he always had foolish ideas about him. When he was young, about twelve years old, he would drive his little pony, of about three feet high, through the front door of his father's house, along the front hall, up a flight of stairs, and back into the kitchen. He would drive him through the whole hall, from the front to the back, and from the back to the front. He was always very fidgety and eccentric. In conversation he would always be wandering and rambling. He was erratic in his remarks. He would talk all right a few minutes, they say, and then carry on some humbug. He would continually be jumping from one subject to another. He would walk into a room and pace up and down and then commence to whistle. He would run, shouting and yelling. He would laugh in the street for no reason, and when there was nobody around. He was always doing many queer, silly things. When he used to get into some sort of a fit, they would not know what to make of him. He would then do the maddest things. He would stop at a public house on the road, and he would buy beer for the horse he was driving. He had a particular way of greeting his friends. If he saw a friend a hundred yards from him he would run after him, dash against him, and catch him round the body, and the result would be that they would both stagger along together. He would ask a young man to cut off some lumps that young man had on his throat, and offer him money to make him consent to that. He would jump from a fence or wall and throw himself on the ground as if he were throwing himself in the river to bathe. He would lie down his full length in pools of dirty water, after a heavy rain, saying he wanted to cool himself. He would ride a bicycle and lead a pony after him in tandem. He would put powder in paper and set fire to it and throw it on the streets or in the cars to explode and frighten the people, and he would laugh at it. He had a habit of jostling people upon the public thoroughfares as he passed them, out of mere recklessness and bravado. When he got punished by his father for not doing what he was told, he would cry aloud for half an hour and then he would say that he would kill his father and would blow his father's brains out if he had a revolver. Children would follow him in the street like they would a fool. People used to speak of him as "mad Shortis, cracked Shortis." He

had a wild, mad and reckless way of riding his horse; he would ride out of his father's stable with his face turned towards the tail of the horse on which he was seated. He would ride standing on the saddle. He would ride in summer as early as four o'clock in the morning, galloping in the most violent manner and shouting wildly. He would ride his pony into shops and frighten the people, and he would laugh and clap his hands. He would ride on railway tracks at the risk of his life. He would ride after children and on people, and drive on his friends. He would ride furiously on the streets, not minding the people, shouting and yelling, calling names to others, and he would strike them with his whip. Sometimes he would drive, blowing a horn. He would strike children on the street, and then he would take them to confectioners' shops and give them cakes and sweets. He would snatch the canes of his friends and break them. He would pinch his friends without cause. He would strike people on the head and drive their hats down over their eyes, or knock their hats down or take them away. He would try and throw his friends and other people from the quay into the river as a joke. He would also as a joke try and upset a boat in which he and his friends were. If he were on the quay, he would kick a dog belonging to a lady or somebody else. He would be cruel to cats and dogs. He would beat the horse he was driving savagely for no cause whatever. He would kick his own dog. He would ride his bicycle at a dog and would give the dog a swinging kick. Sometimes he would hurt the cattle with a pitchfork and draw blood from them, and then he would laugh and clap his hands. Sometimes he would give a blow with a pitchfork to the man attending to the cattle. Sometimes he would talk quietly, and then in ten minutes, his eyes would blaze out of his head, and no matter what he would have in his hands he would let fly at others. He always showed a great proclivity for fire-arms. He had a special fad for powder and fire-arms of all descriptions. He spoke of them all the time. He always carried a revolver. At his father's farm he used to sleep with a loaded double-barrel gun in his room at the head of his bed. He would point his revolver or his gun at anybody who was with him. He would fire his revolver over people's shoulders. He would say that he always carried a revolver because he was afraid people would get mad and attack him, or that his father had often mad fits, and that,

if he had not something to keep him quiet, he did not know but what he might kill him. He would fire his revolver in the air at any time. He would fire at the quay with his revolver or his rifle, not minding the people who were round there. He would fire at steamboats running or moored. He would fire at the lighthouse. He would fire on the river, in a reckless way, in the direction of boathouses, not minding the people there or passing in boats. Sometimes the bullet would strike the other bank, after glancing off the water. The people on the boats would stop rowing for fear of him. He would fire in the field, turning around in ever direction. He would fire in the cattle yard of his father. He would fire at the clock of the town, in doors of the houses. He would fire at the fire grate, in the hall doors of the houses, and in the blinds of his father's house.

"Sometimes, in public houses, he would get excited without cause, and would take out his revolver and say, 'We will do away with these fellows,' but when he would be reasoned with, he would desist. He often said that a very trivial assault committed upon him would justify him in the use of fire-arms, and that he might, in fact, shoot anybody that would raise his hand to him. In fact, he would fire everywhere and at everything, and he would threaten to fire at everybody who contradicted him.

"He had a very bad, hot, uncertain, violent and ungovernable temper, and it got worse as he grew older. He was subject to fearful fits of temper. He was never safe. Although there never was a regular case against him, there were many complaints made against him. His father is very much respected in town, and the accused was shielded a good deal for his father's sake. People refrained from giving information against him, and the constabulary authorities screened him very much out of respect for his father and mother. Sometimes he was to be prosecuted for carrying firearms, and his mother, who is passionately fond of him, went to the county inspector and prevented it. His father is a dealer in cattle. He was trying to teach him his business, but he did not succeed. He was too unsteady. He would not be able to do any business. He could not be depended upon. For instance his father would send him down to ship some cattle, and, when the cattle came to be shipped, he would not be there; he would have forgotten all about it."

In addition to this summary it might be said that he had de-

lusions of persecution as follows: He believed that Mr. Simpson, manager at Valleyfield, had injured him by trying to prejudice the community against him. He was satisfied that Mr. Simpson was in a position of constant antagonism to him, so much so that he was unable to write letters or do other business on account of his actions, and he further said that he had a desire to destroy the life of the manager of the mills in retaliation for these alleged actions on his part, and he further said he would, whenever opportunity offered, destroy Simpson's life in the most atrocious way that it was possible to do. Furthermore, the reasons that he gave for his intense hostility to him, even were they true, would not in the least degree justify such feeling or such retaliation.

He had also hallucinations, believing that he frequently heard parties walking and speaking on the verandah and about the house where he was, and he was certain that such footsteps and voices had a real existence and proceeded from real persons, although he himself had many time searched for the persons, both alone and in company with others, and had never been able to find them. And furthermore, he believed and was in his own mind certain that these supposed persons were in that neighborhood and about the house in which he was for the purpose of molesting and injuring him. Although were there in fact such persons, there would be no reason to think that their presence had any reference to him, much less that such parties could have any desire to injure him.

He had other hallucinations; had seen persons at different times watching him through a window or through a door, there being at the time no one there, and furthermore he believed that such parties were there for the purpose and with the intent of shooting or otherwise injuring him, whereas there were really no such persons in such positions as alleged.

I learned from the records of Clonmell Asylum and from other sources that his father's brother was an insane epileptic and died in an asylum. That his father's father was insane twenty-one months prior to his death. That the brother and sister of his father's mother were lunatics and confined in an asylum for the insane, as were likewise several other relatives. That four of his father's sisters died of consumption.

The history of his childhood, as communicated by his tutors, parents and others, proves him to have been born congenitally defective and a natural imbecile, as is shown by the following facts:

He did not learn to speak until he was seven years of age. He could not be taught the ordinary elements of education, although exceptional advantages were afforded him. Furthermore, as a child and youth, he has always been devoid of moral feeling, discretion and judgment—doing constantly without malice and irrationally, the most outrageous things, leading often to serious injuries. He having neither at the time, nor subsequently, any sense that such acts were wrong, and that later in life he has never been able to learn or apply himself to useful occupations or business. Neither has he ever acquired such moral sense as would enable him to appreciate the import of his actions, from an ethical point of view.

During boyhood and youth, slight illness would produce upon him more than the ordinary effects, showing that his physical constitution was defective. Furthermore, he has been from childhood subject to severe headaches and hemi-cranial neuralgia.

As he approached adolescence the imbecility did not pass off, but on the other hand, the headaches and neuralgias increased in frequency and severity. And about that time he became possessed of absolute delusions and hallucinations as shown above.

Dr. Bucke of London, Dr. C. K. Clarke of Kingston, Dr. Anglin of Montreal, and myself, were unanimous in the opinion that Shortis was a congenital imbecile of the higher order. No specialist was called for the crown.

The usual verdict of guilty was pronounced by the jury, but on an appeal to the Minister of Justice, imprisonment for life was substituted.

REGINA VS. V. R. LEPOINTE.

Lepointe was tried for his life at the town of Brockville, Ont., on May 19th, 1896, for murder committed in the previous March. He entered the town on that day with a magazine gun and commenced shooting indiscriminately at people in the public street, within fifty yards of the police station. He shot a man of the name of Moore dead, dangerously wounded Chief of Police Rose and slightly wounded others. According to witnesses he shot at every one who came within range of his gun and yelled and

shouted every time he fired, as if in exultation over a fallen foe. At last he was shot in the bowels by a policeman and dangerously wounded. He was then arrested. He had fully recovered before the time of trial.

The evidence went to show that prior to 1893 he was an intelligent, steady, honest and hard working man. He was a bachelor and had a small farm which he looked after very well previous to that year.

At that time a change began to take place. He occasionally got on sprees and began to neglect his duties. After any irritation he would threaten suicide. He began to be suspicious of everyone and went about with a loaded rifle looking for concealed enemies. At this time the legal papers were made out to commit him to Brockville asylum. They were, however, for some reason or other not acted upon. At last his delusions took more definite shape and he declared that the Free Masons were seeking to kill him. He then was on the outlook for them. He would sit day after day on the fence watching for them. When in the house he kept a lookout for them from the garret. Sometimes he would be on the watch for them, crouching behind piles of stones in his field, where he could command a view of the highway and the approach to his house. At other times he would watch from the hay-mow in his barn, looking and aiming his gun through the openings between the siding boards. When he was questioned about his strange conduct, his answer invariably was, his fear of the Free Masons and that "We must fight or die, so we must pop at them." He would not take medicine, as he thought it was poisoned. He interpreted the sound of a dinner-horn into something mischievous to him, and even when friends went to the house, he would run and hide. He did not leave his farm from November, 1894, until June, 1895. In 1895-96 he drank but little and there was no evidence of drinking before or at the time of shooting.

His delusional state and his egotism showed themselves in other directions. He imagined himself at a great trial in which he was interested. He dismissed his legal counsel and defended himself with such ability that he was acquitted. The "Masons" thought it was necessary for their well-being that if they did not kill him, then must he marry a red-headed girl they had provided for him, so that, in this way, they could through her influence

procure possession of his property. All he owned was valued at only about \$1,500. In short, all the witnesses gave evidence as to his change of character, as made manifest in his language and conduct. He complained for years of a strange feeling of discomfort in his head, but not amounting to actual pain. He stated himself that it was "an awful feeling." When this sensation existed he was morose and quarrelsome, and often threatened to kill a number of people with whom he had no quarrel. He was forty years of age.

This is the gist of the evidence presented at court by the witnesses. For the defence were Dr. C. K. Clarke, Kingston Asylum, Dr. Murphy, Brockville Asylum, and the writer. We were unanimous that the prisoner was insane at the time of the killing, and that his insanity was in the form of *paranoia*; this was evident especially in the fact that the two fulcrum morbid delusions were, firstly, a belief in being persecuted; secondly, the egotism evolved in thinking himself to be of such importance to a secret organization, and in his faith in himself to do great things, although comparatively ignorant and only of moderate ability.

The verdict of the jury was acquittal on the ground of insanity. He was committed to Hamilton asylum during the pleasure of the Government.

REGINA VS. CHRISTIAN HANSON.

Christian Hanson, a Swede, was tried for murder at Parry Sound, Ontario. He killed a fellow traveler, on a hay-mow in a barn some distance away from dwellings. The body was found under the barn, partially nude, and was identified as one of two tramps, who were searching for work on the day of the killing. Search was made for the survivor and he was found and arrested next day; he made no attempt to escape. At the trial following a verdict of guilty was found against him and he was sentenced to be hanged on the 19th of October, 1896.

On the 28th of September preceding I was instructed by the Minister of Justice to go and examine the prisoner as to his mental condition. The prison is about one hundred and fifty miles north of Toronto. This I did and devoted three days to the examination.

The result was, that on the receipt of the statement of my examination, the Governor General in Council changed the sentence of death to imprisonment for life in Kingston penitentiary.

In my note book was entered the following report:

My first visit was made to him on September 30, 1896, when I had an interview of about two hours' duration. I found it difficult to hold any conversation with him on account of his not being able to understand or speak English, except to a very limited degree. I, however, found an intelligent Swede, who spoke English well, and through him I learned much of the prisoner's life history that was not known before. He was an illegitimate child and never knew his father or mother. He was sent by some charity to the parish school in Sweden and learned to read a little, but knew no arithmetic. He read to me part of the first chapter of St. John's gospel in Swedish, and rightly explained to me by words and signs who Jesus Christ is and that he was put to death on the cross for sinners. I put a number of questions to test his mental capacity; the answers showed he had an average intelligence.

The gaoler (Mr. George) told me that Hanson had on several occasions acted strangely. At one time he was so excited in his cell and made such a noise that he had to put irons on him. This was several days before the trial. He seemed to have a habit to twist up his towels and throw them on the floor at times. On one occasion he took his cell bucket and smashed it to pieces against the iron cell door with no apparent object in view. On another occasion he did not eat any food for two days although he was not sick (so the gaol surgeon says). At times he was unusually stubborn, sulky and peevish, although no apparent cause for this conduct was evident. At other times he was quiet, tractable, obedient. As the gaoler said, "He had bad spells and at these times he would keep muttering to himself."

On account of these intermittent, unnatural conditions I suspected that he was the victim of epilepsy of the nocturnal and less severe form, which would not be seen in the day time. This opinion was somewhat confirmed by the fact that one morning the gaoler found a cut on the back of the prisoner's head and there was blood on his shirt and the floor, which could not be accounted for in any way by the gaoler. Were he an epileptic the cut could easily be accounted for by supposing that in a convulsion he struck his head against the iron bedstead. The gaoler never saw him have a fit, but as a large class of epileptics have them at night, this is not to be wondered at. Dr. Applebe,

gaol surgeon, had been giving him bromide of potassium to quiet him and that medicine would modify, if not stop the fits for a time. A prisoner in the next cell complained of his sleep being disturbed because of the noises made by Hanson.

When I procured the interpreter, the first question I asked was, "Did you ever have fits?" The answer was, "Yes, ever since I was seven years of age." I asked how he knew this. His answer was, "People told me." I asked if he knew the fact from his personal knowledge. His answer was, "Yes; when he saw a cloud before his face and sometimes flashes of light like lightning and had a singing sound in his ears, he then knew nothing until he came to himself lying on the floor or ground." This information showed to me that he was doubtless an epileptic and had been since childhood. The fits would also explain the conduct mentioned by the gaoler. The gaoler says that the prisoner on several occasions thought that unknown men were sometimes in his cell at night to do him harm. He does not remember about supposing any such thing. Epileptics, however, often have hallucinations and delusions immediately before a fit comes on and sometimes after it has passed away. They speak of these at the time, but frequently forget them as we do dreams.

October 1st. I visited the prisoner a second time to-day and had an interview with him of nearly two hours' duration.

I went over nearly the same ground that was traversed yesterday to find out if there would be any contradictions in the two statements. There were none.

He then made a confession to me in which he acknowledged that he killed James Mullin. He stated that they accidentally met and as both were looking for work they traveled together. This was the same day as the murder. At night after dark they went to a barn and crept up upon some hay and straw in a loft. As far as he was able to judge this was between 9 and 10 o'clock p. m. The prisoner had a small carpet bag and a stick which he put through the handles of this bag and with the stick on his shoulder, he carried it in this way. When about to lie down to sleep the murdered man objected to his having the stick and took hold of it to take it away from him. He was afraid it might be used against him, as Mullin was a stranger to him, and so resisted the attempt, but the murdered man got it away from him. He again seized it; they then had a struggle for its possession

in which Hanson got possession of it. They were both standing, and as he was afraid and angry, he hit deceased with it and then struck him a second time, but does not know whether deceased was standing or not when he struck the second blow. He did not intend to kill him and did not think he was dead until he stooped down and found he did not move. He then went out of the barn and walked some distance away. He then changed his mind and went back to the barn. As he had poor clothing on himself he thought it would do no harm for him to take some of the clothing off the dead man and wear it himself. He did not like to see the body in the loft so he took it down and put it under the barn where it would be out of sight. He did not cover up the body with anything. He had headache that day and was cross, and although he remembers these things, they are not very distinct in his memory and are like a dream. He then left the barn and, after walking a short distance, he lay down by the roadside and slept until daylight. The next day he traveled along the road both had agreed to, to search for work. He had no ill-will against the deceased and had there been no quarrel he would not have struck him. He wished he were dead himself rather than "the other man."

He states that he earned in Sweden as cowherd six hundred crowns (\$168). When he landed in Montreal he had remaining five hundred crowns. One night he was asleep in a lodging house and he found in the morning he had been robbed of all his money. That was about three years ago. This loss of the savings of more than twenty years' labor so discouraged him that he did not settle down anywhere for any length of time, except six and one-half months in which he worked in a nickel mine in this Province. The above is virtually and truly his confession to me. It was candidly given and I am convinced in making it he had no intention to deceive. In fact, he did not see the drift of many of my questions and has no hope of being saved from the gallows whatever statement he might make. He has a very unintelligent face and is very nervous and stood trembling during all our interviews, but not from fear, as he looked upon me as his friend.

October 2nd. I made another visit to the prisoner this morning. Dr. Applebe and the sheriff were present at all my interviews; nothing new of importance was elicited from the prisoner.

In answer to a question about his having at any time received a head injury, he said that last February while cutting down a tree where he had been temporarily employed a branch fell and struck him on the head. He was knocked down and was insensible for a time. It is not likely that much importance can be attached to this accident.

I find that on the night of the murder there was a new moon, so it must have been very dark in the barn. The prisoner has lost the use of an eye and sees poorly out of the other. How does it happen that in the dark he was able in his blindness to strike Mullin two crushing and deadly blows upon the head and jaw and not on other parts of the body? The prisoner says he cannot account for this as he struck at the deceased in the dark and did not know what part of him he struck. He was very much excited at the time of the struggle, so he says, and was not able to control himself. This statement might possibly be true were we sure that a fit had taken place antecedent to the event. In summing up the life history of the prisoner, joined with my own observations of him, I submitted the following opinions:

1st. There is no evidence at present of insanity or imbecility in the prisoner. There has doubtless been in his case, at times, a mental condition of excitement caused by epilepsy. This is only temporary and intermittent in the sane, and cannot rightly be classed as a continued diseased state to which is applied the term insanity. The prisoner has been an epileptic from childhood. Of course, epilepsy, pure and simple, could be no excuse for murder. Many sane people are epileptic and are useful as well as law-abiding citizens. It may even be accompanied by transitory mania or delusions and affect mentality to a limited degree, yet insanity may not supervene.

2nd. It is possible that the prisoner may have had a fit near the time of the killing, as headache, irritability and partial loss of memory seem to indicate. This statement cannot be made with certainty. It is only a probability based on my experience with other epileptics and some of them with homicidal proclivities.

3rd. There seemed to be no effective motive for the crime. The possession of a few old clothes could not be an incentive, and if the prisoner's statement is to be taken, even this was an afterthought.

4th. It was evidently unpremeditated and could not be from "malice aforethought."

5th. It is evident that if the statutory legal test is made the standard to determine this man's responsibility (not being insane or an imbecile) he must be looked upon as responsible for the killing, even if done in a quarrel or in hot-blood, unless it was done without intent or by misadventure. If prisoner's statement is true then it was the latter.

6th. He doubtless knew the *nature* of the homicidal act. His intelligence is sufficiently enlightened to enable him to understand that he was striking the man with the stick to do him bodily injury. He knew that he had killed the deceased and also knew that it would be better to hide the body, no doubt to prevent immediate discovery.

He had to some degree a knowledge of the *quality* of the act in so far as an understanding of legal punishment was concerned, as well as the immorality of the act in an ethical sense, although he is a man of comparatively low moral attainments.

From a medical standpoint, the epilepsy with its accompanying intermittent want of mental equilibrium, would be an important factor to modify the guilt of the prisoner. He would be looked upon at best as having only a rudimentary moral nature and a limited responsibility therefor not worthy of death, but certainly he would not be safe to be at large in the community.

His sentence was commuted to imprisonment for life in the Kingston penitentiary.

Since his residence in the penitentiary I am credibly informed he has broken out into acute mania and is confined in the asylum branch of the prison.

This corroborated the prognosis I had formed of him as a possibility of the future.

REGINA VS. JOHN KEARNEY.

In March, 1896, an elderly retired farmer was found by his wife, shot and thereby killed, at his own stable door in the evening of March, 1896, in the town of Lindsay, Ontario. He went out to feed his horse and was opening the door when the fatal shot was fired.

Suspicion at once fell upon a sixteen year old lad of the neighborhood with an unsavory reputation. About half an hour be-

fore the shooting took place he was endeavoring to sell an old pistol to a number of boys in the street of the town of Lindsay. He fired it in the air several times to show to them its capacity. He failed to sell it and went away, when shortly afterward a shot was heard in the direction of the murdered man's residence. This lad was suspected and when examined a number of articles belonging to the old man were found upon his person; not only so, but the rubber overshoes he wore had peculiar ridges and depression on their soles. Exact moulds of these were found in the snow at the stable door.

All the evidence showed conclusively that Kearney did the killing. When he was examined by the witness he was found to be undersized, pigeon-breasted and the head only twenty and one-quarter inches in circumference. His intellect was of a low order, and as his life history showed, he had never had a moral nature developed. He was, in short, a moral idiot. He went a good deal to school for about three years, but only learned words of one syllable and only knew the simple parts of the multiplication table. He had been previous to this time four times before the police court; three times for theft and once for malicious destruction of property.

The writer's evidence was that he was not insane in the usual acceptance of that term, as there was no evidence of brain disease, but he was evidently feeble-minded and belonged to the higher order of congenital imbeciles, with a limited responsibility. This view was corroborated by Dr. C. K. Clarke and Dr. Jeffers, the gaol surgeon. A verdict of guilty was returned, but on an appeal being made to the Minister of Justice, the evidence was accepted and commutation took place. The unfortunate lad was thus saved from the gallows.

REGINA VS. BRENNAN.

Brennan shot a gentleman of the name of Strathy in the town of Barrie, at his own door, with a pistol after a quarrel. This was in April, 1896. The murderer was tried at the spring assizes in Barrie and found guilty, although the plea of insanity was set up. Dr. R. M. Bucke was the principal witness for the defence at the first trial. Before the execution of the law could take place a new trial was ordered, as the judge would not allow the jury to bring in a verdict of manslaughter instead of murder.

The second trial took place October 26, 1896. It was shown at both trials that the accused was and had been for several years subject to hallucinations of hearing and also delusions. The central idea was that he was being conspired against and persecuted not only by his neighbors, but also by unknown persons. If people were talking in the street, he thought the conversation was about him. Where no one was to be seen he heard voices and these were uttered about him. He bought a revolver in Toronto, because he asserted he had been assaulted in the street on two separate occasions and he wished to defend himself against subsequent attacks. There was no evidence to show that he had been assaulted. He believed that his wife had been unfaithful to him. She had the reputation of being a most estimable woman and had a grown up family. He had not a tittle of evidence to present on which to base this belief beyond his own morbid fancies. He would go home to his house at all hours, when working several miles away, and search the house for some hidden person he supposed might be present. Two grown up daughters were always in the house. He assaulted a legal gentleman in the street on the supposition that he had illicit relations with his wife, when there was no evidence to support such a fancy. He accused a clergyman of the same crime, with nothing to substantiate it. The gentleman he killed was a most estimable citizen, who Brennan himself says had often befriended him. The prisoner went to this gentleman's house with a loaded pistol, doubtless to do him harm because of his supposed relations with his wife. When he was being put out of Strathy's house because of his attempt to produce a quarrel he turned about and shot him dead. A great deal of evidence was produced to show that he had acted peculiarly and had been unnaturally suspicious, morose and erratic for more than a year before the tragedy.

Dr. Bucke at the previous trial and the writer at the second trial both held that he was a paranoiac, as all the symptoms pointed to that form of insanity. As usual, such evidence had no effect on the jury and a verdict of guilty was given the second time, but with a recommendation to mercy. These jurymen seemed to have some misgivings as to the correctness of the verdict and judged there were extenuating circumstances, hence a recommendation for mercy.

An appeal was made to the Minister of Justice and the result was a commutation to imprisonment for life.

It will be discerned that at the five trials a verdict of guilty was rendered in each of four cases and the expert evidence had no effect on any of the juries, except in that of Lepointe. One of the juries was afterwards canvassed and it was found that not one person in the panel had ever seen an insane person. All the judges laid down a knowledge of right and wrong and this metaphysical definition was made the only test of responsibility. When this ethical test, so false in itself, will become obsolete no one can know. When an appeal is made to the Governor in Council, one of whom being the Minister of Justice, all the data in each case are fully considered and the evidence of experts has there its due weight.

The writer always feels that in giving such evidence in courts of law he is "wasting his sweetness on the desert air," but he has the confidence that if an appeal is made to the chief executive, justice will be done to all evidence which may have been presented in court both for the crown and for the defence.

DISCUSSION.

DR. W. W. GODDING: Not to allow this valuable paper to pass wholly without remarks, I take the floor in the hope of opening this question for others. These very interesting cases it would seem, with one exception, would go to illustrate how powerless in the court is the expert opinion. To us as experts accustomed to study mental processes from a pathological standpoint, the basing of legal insanity upon a man's knowledge of right and wrong, seems simply absurd. The only excuse is that the protection of the community requires an example "that the way of the transgressor is hard." It would seem that the courts cannot recognize pathological conditions; at least, that is the conclusion to which I have come. They simply want to know whether this man knew the difference between right and wrong, not whether a diseased brain was compelling him to do some act that he would not have committed otherwise. The State of Alabama alone gives us a good example, an example which is largely due to the labors of Dr. Bryce. For one, I have long despaired of seeing the courts and the doctors get together, but I have recognized

that there is a hope of last resort in the good sense and the pardoning power of the executive.

DR. HENRY E. ALLISON: These cases of Dr. Clark's are very interesting to those engaged in the care of the criminal insane. The delusions that characterize these patients and which cause their acts are delusions of persecution; probably in seventy-five per cent. of all cases charged with crime, delusions of persecution are present. It is not a necessary procedure to send such patients to the penitentiary or prison, neither is it right to send them to a general hospital for the insane. If sent to prison, justice is not always secured, and if sent to a general asylum they restrict the movements of the other inmates and make the asylum prison-like. Society feels that it must protect itself in some way against acts of these patients.

HON. A. J. MILLS: I was present in Philadelphia when a discussion similar to this was engaged in. At that time, Judge Mason of Geneva, was also present, and many of you will remember the masterly argument he made from the legal standpoint. I wish to say here and now that I do not feel able to take his place in such a discussion. I appreciate that there has been and will continue to be difficulties as between medical men on the one hand and lawyers upon the other in regard to expert testimony. You do not find as much difficulty between the professions in this respect at the present day as in the past, and as the professions become more learned and less superficial in their learning, this question which seems to arise to the dignity of a dispute, will practically be done away with. You cannot make an expert in medicine without sufficient medical training and study, and you cannot make a lawyer or a jurist without a thorough legal education.

It has been suggested by two of the speakers that the verdicts of juries have shown that little respect is paid to the testimony of physicians. That is true, gentlemen, and in many cases it ought not to have been so, but in extenuation, it must be said, that experts sometimes make mistakes, and it is these mistakes that make the trouble and cause juries to show less respect to the opinions of men whose judgments ought to be preferred in such things. Let me give two illustrations:

A young man about sixteen years of age was tried before me for murder. He was sitting at the breakfast table with his sis-

ter, a young lady of about eighteen, and a little brother, about twelve years old. They had a quarrel about some trifling matter, and the elder brother went to the bureau drawer, took out a razor, passed behind his little brother, pulled back his head and nearly severed it from the body. At the trial the plea of insanity was set up. A number of physicians testified that he was insane, and an equal number that he was responsible. The verdict was a disagreement, eleven jurors standing for conviction and one for acquittal. He was afterwards committed to an asylum. In less than three months he was permitted to go at large with patients on the grounds, made his escape, and has not been heard from since. For a long time after that you couldn't successfully defend upon the plea of insanity in that region and expect a jury to put much faith in it. The people say if the man is insane and commits an act of that kind, he ought to be put where he cannot do it again. The difficulty has been solved with us by the establishment of an institution for the care of the criminal insane. They do not escape from the Ionia institution.

Case Second.—In the county of Barry, a man named Easterly was charged with an aggravated assault, and thought to be insane. The prosecuting attorney called in expert testimony, and they declared it to be their opinion that the man was not mentally responsible. Among other things, one of them said that he had a prognathous jaw. The people said he ought to have said a pugnacious jaw. The result was that the criminal was sent to the State Asylum for Insane Criminals, but later was returned to Barry county, tried and convicted, and is now an inmate of the State prison, for the doctor found that he was a responsible man.

This goes to show why juries do not always show respect to really expert testimony. There are a number of States where the criterion in insanity cases is that of right and wrong, but I am thankful to say that in Michigan that has never been the rule. The Supreme Court has laid down the rule of criminal responsibility in insanity cases, and it ought to be followed in every State, viz.: Did the prisoner know the nature and quality of the act he was doing, or, if he did know it, why he did it, and did he have sufficient mental capacity to resist the impulse to do it? Were his mental faculties such that he was capable of appreciating the moral qualities of his actions, or of any intended result?

DR. H. M. HURD: Juries do not take the opinion of medical experts often because of a wide-spread feeling in all communities that the forms of law have been used to screen criminals. In this State that feeling has become so strong that on two occasions where the Governor had appointed commissions to investigate the condition of the criminals alleged to be insane, in one instance before and in the other after trial and conviction, the individuals were lynched before a report could be made by the commissions. I believe this to be the predominant feeling in many States, and we as physicians have a duty to perform towards educating the general public, as well as juries and lawyers. The innate ferocity of human nature can only be gotten rid of by education.

DR. DANIEL CLARK: I must say that I quite appreciate the statement made by the judge, and also the remarks which he made in regard to medical evidence being procured in court trials for both sides of a case. That has always been so and I presume will remain so, as even doctors will differ. This is to be expected when the personal equation is taken into account. In a number of the last criminal trials at which I was an expert witness, I have refused to give my opinion to either the crown or the defence before going into the witness box. Such must subpoena me at their own risk in respect to what my opinion may be. The coaching of medical witnesses by lawyers very often unconsciously influences medical witnesses even before the evidence is presented. An expert witness should always assume a semi-judicial position and give no biased testimony. It need scarcely be said that the ethical test in respect to the mental conditions of criminals which was laid down in the McNaughten case in 1843 is fallacious and leads to convictions of the insane. There is no safe test but in considering every case as to diseased conditions in order to estimate a man's responsibility.

THE CONSTRUCTIVE FORCES.

By **RALPH LYMAN PARSONS, M. D.,**
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Much has been written and many investigations have been made regarding the reproduction of living things, the hereditary influences that mainly determine their form and destiny, and the causes which gradually bring about more or less permanent changes in their form or function.

But, however much may have been thought, comparatively little has been written about the forces which are the builders of the body; those architects which from a common mass of material build up one sort of structure here and another there; and all in due proportion, one part to another; and with due regard to the function each is to perform. Nor is it to be wondered at that this is so; for an exact knowledge of what these forces are and of how they operate must be at the utmost limit of the power of human intelligence, if not quite beyond; as is likely to be the case.

It may then be asked why an inquiry about the nature of these forces should be made at all; and especially before this learned Society, the members of which are so assiduously occupied in their efforts to unravel those mysteries of nature which are near at hand, and presumably within their reach; and the understanding of which would be of direct and immediate advantage to the human race.

It may be replied, that knowledge is to be sought for its own sake; and, moreover, that its useful application is quite sure to follow its attainment. And then, if the search for a particular sort of knowledge prove to be fruitless, the eager search is of itself a source of pleasure and of strength; and, furthermore, is likely to reveal some form of useful knowledge, other than has been sought. In fact, we cannot help our wonderings and our searchings to find out the secrets of nature, although we are quite

aware that the fulness of knowledge about these secrets is always beyond our reach. We do not know the cause of what appears to be the very simplest of the forces of nature, nor even how it operates. But, although we do not know the cause of the attraction of gravitation, nor whether it is of the nature of a pull, or of a push, or of some other nature, men of science have found out some of the laws in accordance with which it acts. And so of other forces, as electricity light and heat; although we know little, if anything, of their intimate nature, we are fortunate enough to have learned something of their mode of action and of their co-relations.

A knowledge of the essence of things would imply an infinitude of knowledge; a knowledge of the All. Hence this sort of knowledge must be beyond the reach of finite intelligences, whether in this, or in any other state of existence. Finite beings can never fathom the infinity of space; for to the finite there must ever be a beyond. Nor can they ever apprehend the infinitely small; for, as there is no number so small that it cannot be diminished, so, there is no space so small that it cannot be divided. To whatever degree the conception of diminished space may be carried, by a finite intelligence, a still smaller space must be possible.

And so, it must be confessed that the most fruitful subjects of study are the appearances, properties, actions and relations of beings and of things. If we cannot expect to find out the essence of the forces of nature, we can at least investigate the peculiarities and the co-relations of these forces with some expectation of success; as has already been especially done in regard to the forces which act upon matter, as such.

At this point it will be of advantage to consider what some of the properties of the physical forces are; and also what relation and contrasts these forces bear to other forces in nature.

In the first place, it may be observed that the physical forces, *energia*, as they are sometimes called, are not constructive. It is true that the force we call gravity does tend to agglomerate particles or masses of matter; but this sort of massing together has no tendency to produce any definite form; unless, perhaps, the globular be excepted. Instead of cosmos, chaos is the result. Radiant energy tends to the dispersion of matter. Electricity and magnetism are not constructive in their action, even when they

cause bodies to approach each other. Molecular energy is disperseive instead of constructive.

Physical energy neither increases nor diminishes in amount. The sum total of the physical forces in the universe is a constant quantity. The manifestations of energy may and often do change, as when the energy of motion is changed to the energy of heat; but this is a mere change in form and not in quantity; it is a correlation simply. And so, physical energy does not reproduce itself.

Physical energy may be latent, as when the energy of heat is stored in the diamond; but the original potentiality remains unimpaired so long as the diamond retains its unity of structure; and when this is lost the latent energy becomes active in its full force.

The term constructive force has been employed, thus far, instead of vital force, or vital energy, for the purpose of directing the attention more especially to its function as a builder; but these terms may be considered as synonymous in meaning, in what follows. And now it is in order to review some of the characteristics of the constructive forces, and more especially those in which they differ from the physical forces.

While the physical forces, of themselves, only bring about agglomerations of heterogeneous materials, the vital forces so arrange matter that the particles are set in order, one sort in this place and another in that, and always in such manner as to show that some definite end has been accomplished. Nor do the phenomena of crystallization and chemical affinity form an exception to this rule. It has been clearly shown that all the phenomena of crystallization may be accounted for by the action of known physical forces. The same is undoubtedly true of all chemical compounds. And, moreover, in both cases, the very definiteness and uniformity of the compounds stamp them as being subject to the mathematical exactitude that pertains to the physical forces.

In the second place, while the physical forces are never increased nor diminished in value, however they may change in mode of action, the constructive forces may be increased to an indefinite extent, they may be diminished, or they may be destroyed altogether; as by the agency of heat. A centre of vitality has the power of inducing contiguous dead matter with

its own vitality in such way that the sum total of vital energy may be doubled, or increased to an indefinite degree; and this without itself suffering any diminution.

Vital energy as well as physical, may be latent; as in the dormant seed. But when this energy becomes active, it may exercise all its original powers of control, increase and reproduction.

Physical force and vital force, then, are essentially different in their nature. The one is essentially destructive, the other is constructive; the one is an invariable quantity, the other is a variable. The one is never derived from the other. The most careful efforts to stimulate the advent of life, where none existed, always have and always must prove futile. And not only are these forces dissimilar, but they are in constant antagonism; until finally the variable forces yield to the invariable, and vitality, in the particular instance, is utterly extinguished.

In the further consideration of the constructive forces, two diverse methods suggest themselves; on the one hand the study of the simplest structures, and on the other the study of the most complex. Each of these methods has its advantages; but, as the latter is the more direct and striking, attention will be especially given, in the first instance to the higher types of animal life.

When the tissues of the living animal are divided by means of a sharp knife, a process of repair is immediately begun; and in a short period of time the divided tissues are reunited in such a way as to have something like their former integrity. The contiguous parts appear to have taken cognizance of the injury that has been done, and at once to undertake the necessary repair. And not only this, but the whole body is brought more or less into sympathy with the work that is being done. There appears to be an intelligent adaptation of means to ends; and, to some extent, intelligent co-operation. A similar process, although less open to observation, is of constant instead of occasional occurrence, and in all the tissues of the body. Parts of the structure of each of the tissues are constantly becoming worn out and useless. These worn out tissues die; they are discarded by the adjacent living tissues, which then take from a common storehouse of material such portions as are suitable, induce this new material with their own vitality, and so renew the disabled structure. The whole body undoubtedly co-operates in this process of re-

newal, although the co-operation may be less obvious than in the case before mentioned. But, although these different sorts of tissues, having different offices to perform, are dependent on the whole body, many of them, at least, may retain their vitality and their peculiar functions when separated from the parent body and grafted on some other body. That is, to some extent, they have an individuality and vitality of their own, by virtue of which they perform certain special functions, and may act as constructive agents. In this respect, they are like the tissues of plants; and in this respect they may fairly be considered as instruments which are not in the highest sense parts and parcels of the being itself, although they may be required for the accomplishment of its greatest energy and usefulness.

The changes involved in the process of growth are similar to those involved in the process of repair, save that the construction of new tissue is not a process of renewal; and, a more important distinction, that the process of growth, in its beginnings, at least, involves the pre-existence of a plan, and also of a constructive force which pertains to the body as a whole. This last fact becomes more evident when we take into consideration the mechanism of a living and complicated structure. Here we have a great variety of organs and members, each of which has its peculiar office; each of which has a proper relation to all the others; and each of which is in due proportion to the others and to the work it has to perform. The head, the arms and the legs are not placed, indiscriminately, one in one position and one in another, as would be the case if these members were first constructed entire and were then thrown together by chance. And so, there must have been some constructive force which acted as a master builder, controlling and governing the placing of these members; and in like manner, of all the other members of the body. And this force must be a unit. If it were not, there would need to be a concert of action between the various local forces which control and regulate the building up and arranging of the different members and organs of the body. But, the hypothesis of a number of separate and diverse forces so acting in accord as to build up a construction of harmonious proportions would be much more improbable, even, than would the efficient management of an army by its individual members, without the guidance and control of a leader.

The nature and potentialities of the constructive force which presides over and controls the building up of the body may, perhaps, be better apprehended by considering its relations with the future body at the beginning of its existence, as a separate entity. In the higher animals, the genetic forces which are essential to reproduction are inoperative, until a certain conjunction of these forces has taken place. From this moment, the fertilized ovum is an individual being which contains within itself all the potentialities of the fully developed being, at its maturity. From this moment, in everything that pertains to its personality, save possibly in one respect that will be mentioned later on, it is as independent of one of its progenitors as of the other. It is true that the maternal progenitor furnishes a safe abiding place and the nourishment required for its development, and that the character of its habitat and of the food supplied may affect its physical constitution, in certain ways. But the influence of habitat and of food, at this stage of its existence, is of precisely the same nature as the influence of habitat and of food after complete separation from the mother has taken place. Or, from another point of view, if the fertilized ovum could have been placed with a foster mother, at the very beginning, and under the same conditions as with its own mother, the resultant would have been quite the same.

This fertilized ovum, then, is the future being. It already possesses all the hereditary characteristics it ever will possess, whether from the father, from the mother, or from more remote ancestors. And, moreover, it contains within itself the constructive forces for the building of each and every constituent part of the body that is to be, as really and as fully as though the body, with all its members and organs, were already developed. And as, in the first instance, the constructive force pervades the ovum, so it afterward pervades, presides over and protects the physical being it has constructed. Or, in other words, underlying the material structure of living bodies is another substance, pervading each and every part, and making them what they are.

If this last proposition does not command immediate assent, it should be borne in mind that a constructive force does exist in the fertilized ovum, and that this force does control the building up of the fully developed being; and then, that what was a log-

ical necessity at the beginning must remain a necessity to the end.

If it be objected that the same difficulties attend a conception of the development and continuance of the constructive force as were found in the case of the being that has been constructed, it may be replied that this force inheres in a substance that is not material, and so is not subject to the laws of matter.

In the course of our studies of the laws of nature we are, for the most part, so engrossed in the study of material substances as sometimes to forget that there may be substances which are not material; that is, substances which do not possess all the properties which are considered as essential to the existence of matter; as impenetrability, extension, divisibility, inertia, etc.; and that, possibly, there may be forces which do not have any material substance as a basis. For instance, the luminiferous ether is unlike any other substance with which we are acquainted, in these regards. We cannot say that it offers the least resistance to the presence of other bodies, and so cannot affirm that it has the property of impenetrability. It certainly is extended, but not in the sense in which matter is usually considered as an extended substance. Ordinary matter has limits and boundaries; the ether is boundless; ordinary matter differs in different parts; in density, if in nothing else. The ether is absolutely uniform in all its parts. When ordinary matter comes in contact with other matter, some sort of change takes place in one or both of these substances. When ordinary matter passes through the ether, no change whatever takes place in either the one or the other. Although the ether is constantly traversed by material substances, every portion of the ether retains its original position as unmoved and as rigidly immovable as though it were the only substance in the universe. Nor can the ether be divided into parts, in such a way that one of the parts may be placed here and another part there, as ordinary matter can be divided. And yet, this substance which so fails in coming within the definition of matter, has properties of the most decided and positive character.

At all events, it may fairly be postulated that the constructive force which builds up and pervades the body is based upon a substance that is not material. If this postulate be granted, it may readily be understood how this force may be present as a unit in every part of the material body at one and the same time,

For, our ideas of space are entirely founded on and subservient to our ideas of matter. The distance from this point to that is estimated by the measured space that intervenes. And so, if there were no material points and no intervening measure, there could be no conception of an intervening space. If then the constructive force pertains to an immaterial substance, and so is not subject to the laws of matter, it can be present in its integrity in all parts of the body at once, as demanded by the requirements which have been shown to exist.

But, because what has been emphasized as *the* constructive force has the exalted functions, to which reference has been made, it must not be forgotten that there are many orders of these forces, from those which pertain to the growth and reproduction of the simplest cell, to those which govern the most complicated organs, the highest orders of beings, and the most exalted functions of these beings.

It need not be assumed that because the constructive force pre-sides over the form, proportions and functions of an organ or of a being, it must itself have any such form, proportions, or functions. This is no more necessary than that the part of the brain which perceives an image on the retina of the eye should in any way resemble this image. All that is intended to be shown is that there are inherited, immaterial forces which are the efficient builders of all organic things and beings, from the lowest to the highest; and that while all these forces are similar in their nature, they differ the one from the other in like manner and degree as do the things and beings of which they are the builders. Furthermore, it would seem to follow that, if these forces are immaterial and do not correspond with the forms of the bodies of which they are the builders, there can be no reason why their influence should be confined to the strict limits of these bodies.

No attempt will be made to give a practical bearing to the facts and hypotheses that have been set forth, if, peradventure, the latter should be accepted as correct; but attention may be drawn to their bearing on such observed or assumed facts as the following, for instance: The influence of the mind upon the body; somnambulism; hypnotism; the reciprocal influence of persons who are not aware of the presence each of the other; the mental influence of one person or animal on another; the feeling that a person or animal is present or near by, when the senses give no

obvious notice of such presence; the mental influence of the mother over her unborn child; and others of more remote relation, or of greater improbability.

And in all this, it cannot be claimed that any new ideas have been advanced; for it is very well known that all of them have been advocated, in one form or another, by many different persons, in different countries, and at different times; but only that an attempt has been made to present the subject in a somewhat different and, in some respects, more advantageous way, it is hoped, than has hitherto been done.

THE PRACTICAL LINES OF WORK NEEDED FOR THE ADVANCE OF PSYCHIATRY.

By THEODORE H. KELLOGG, M. D.,
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The term psychiatry is here employed not only in its literal meaning of the treatment of mental disorders, but also in its broader significance of the entire science of diseases of the mind. This science in its immediate relation to the care and cure of vast numbers of insane in all civilized countries has become of immense practical importance and interest to the philanthropist, social economist and medical scientist. Great indeed will be the services rendered to the profession and general public by the combined wisdom and genius which will ultimately suggest ways and means for the practical advancement of this science. The inadequate number of medical men who have been active pioneers in psychiatry have been overwhelmed with work in the solution of the more grossly material problems of the science, and have not even found time to put on record the valuable knowledge, which the life-long practice of a specialty always brings to intelligent physicians.

From neurological sources have come stimulating and timely criticisms of scientific things left undone by the practical psychiatrist, and also a revelation of some naiveté as to those things, which, by dint of his laborious energy, were already *faits accomplis*. But a systematic statement of the means of performance, or of the details of the actual labor to be done to broaden psychiatric science is still a desideratum, which it is the object of this paper in some measure to supply. It must be stated at the outset, that the science of psychiatry can only be advanced by hard scientific work, performed by those having superior technical attainments. Much of this work can only be done in laboratories, under the immediate supervision of one having the highest form of special knowledge. Some have been impressed

with the crude idea that such work might be performed by dilettanti pathologists, who perchance had been sent abroad to study for six months or a year. After several years' work in European laboratories, the writer deems himself justified in proclaiming the futility of all such attempts to supply a solid basis of facts on which to build a science. As well might it be expected that a young physician, after one year's study on the surgical side of a hospital, would be fitted to grapple with the difficulties of surgical science or extend its limits by original work. It takes as long to make a thorough pathologist as a first-class surgeon, and about ten years of all round work is what is needed. That which is true of pathology, may be affirmed of all kinds of laboratory and clinical work, having in view not the laudable instruction of young physicians, but the positive advance of the science, which is the sole question now under consideration.

For the reliable extension of scientific deductions, how absurd would be the researches among insane patients of a young physician who had given a year to the study of ophthalmology, compared with the reliable data which a skilled ophthalmologist could alone furnish after a careful interpretation of the clinical material studied by the light of long years of experience. It would be equally irrational to presume that the young physician who had enjoyed one year of special neurological study could go among the thousands of patients in the wards of hospitals for the insane and solve the intimate relations of neurology and psychiatry.

It is high time to recognize this fundamental truth, that the advance of psychiatry demands the services of competent men, specially educated and equipped to undertake the highest forms of laboratory work, experimental research and original investigation. Under the direction of such men a vast amount of routine clinical work can be carried out by medical assistants receiving only a tithe of the remuneration, which must be provided for those having superior knowledge to plan and supervise, and finally interpret the results of the labor to be performed.

The failure to provide the ways and means for these things is shortsighted economy on the part of the States, which expend millions of dollars annually for constantly increasing numbers of incurable insane patients. As a beginning in this direction,

in each State at least one completely appointed laboratory should be established, and a competent corps of skilled specialists could make the tour of the institutions for the insane to utilize the clinical material and to initiate uniform modes of study and investigation to be conducted by the local medical officers under their continued direction. The corps of special experts would also determine the nature and amount of material to be sent to the central laboratory for chemical or histological examination. They should receive ample compensation for their services and be required to publish in full semi-annually the results of their scientific researches. They should be empowered to call to their aid, during their quarterly visits to institutions for the insane, such other specialists as they might deem best for the single occasion. These preliminary suggestions as to the more technical parts of the labor to be undertaken, lead to the main question of the actual lines of work now needed for the advance of psychiatry.

This needed work is as many sided as the science of mental disease, and it will be described under the following heads: 1, Physiological Psychology; 2, The Natural History of Mental Disease; 3, Pathological Histology; 4, Biochemical Research and Chemical Analysis; 5, The Study of Clinical Phenomena; 6, Statistical Records; 7, Therapeutic Investigation.

It is well understood, that these are not all the subjects allied to the science of mental diseases, but they embrace the chief orders of facts essential to the advance of psychiatry, and they will be discussed briefly in some of their more practical relations to this subject.

Physiological Psychology.—The study of normal mind is a natural prerequisite of the comprehension of mental disease and mental physiology must precede mental pathology. The beginnings of intelligence on the rising scale of animal life deserve the most careful investigation, and then the whole field of comparative psychology promises rich rewards to workers devoid of bias and capable of the making of accurate observations. The mental life of childhood, and the psychology of the whole class of simple-minded human beings of arrested growth of intelligence, have as yet been most inadequately studied. The comparative study of the normal evolution of mind, as influenced by age and sex, and of other psychological questions of great mo-

ment, might be carried on to great advantage in public schools in connection with the relative rates of psychic and somatic development. As to the fully developed human mind, it is to be admitted, that within the last decade valuable researches in normal psychology have been made, but this is only a beginning in the right direction.

Faithful studies and truthful records of all intellectual processes in health, and their variations within physiological limits, are needed as standards of comparison for mind in its pathological departures.

Among these needed data are the individual differences in perception, the normal sensorial peculiarities, the actual proportion of the disease of special sense-organs, and the positive illusions, hallucinations and other perversions of special senses among the sane. Disorders of consciousness and of memory within the limits of sanity present a rich field for investigation. Tests for voluntary recollection for places, persons, dates and events both recent and old, made uniformly among persons of like age, general degree of education, and living under similar circumstances of life, would be of great value.

Obscurations of consciousness, extreme instances of absent-mindedness, and all temporary obnubilations of relations to the personal environment should be recorded, as well as brief eclipses of the sense of personal identity.

The subject of *sane delusions* is of great importance, and has never been systematically studied. History, indeed, abounds in records of wide-spread delusions and of epidemic follies. The intimate relation of false beliefs to insanity demands a most thorough investigation of this subject with records such as could readily be made.

Among the sane, studies with the modern apparatus of all kinds should be carried on in psycho-physics. Practical work in this direction consists in æsthesiometric tests of cutaneous sensibility, thermometric tests of the temperature sense and of the sense of locality and of the direction of cutaneous stimuli. Tests should also be made of the kinæsthetic sense, of the sense of pressure and of all the special senses. Experiments have not yet sufficiently determined the reaction-time with tactile, auditory and visual sensations. Discrimination-time and volition-time as well as simple reaction-time is needed. The affective faculties

and the normal emotions of men, women and children, are to be studied with great caution and rational circumspection. The feeling of poets and romancers, who have depicted human sentiments, must give place to keen logical analysis, and the physical lesions and changes in vital functions wrought by severe emotions should form part of the records to be made.

Finally, the normal psychology of the evolutionary and involutional epochs of puberty, the menopause and senility should be faithfully noted in a large number of cases with data as to temporal variations, and observation of special family or racial differences in these regards.

The Natural History of Mental Disease.—It is of prime importance to know the natural history, the normal course, duration, symptoms and terminations of mental disorders uninfluenced by active therapeutic measures or other decided interference. Practically this information might be gleaned from hospital records in a few exceptional cases, and from the history of private cases. A complete natural history of all the types of insanity thus made in a carefully studied series of cases would have scientific value for comparative purposes, and as regards the self-limitation, and also the periodicity of mental diseases. There is scientific need to know this natural standard of the evolution culmination and recurrence of the psychoses, and it is only in this way that the inherent cyclic tendency and neurological characteristics can be determined in a natural history-series of cases carefully studied with instruments of precision and all known tests throughout the natural mutations of the disease under ordinary hygienic conditions, and in the absence of surgical or therapeutic resorts.

Such a series of cases has never yet been put on record, and it would serve to confirm present knowledge of the normal stadal progression of individual types of mental disorders, and it might throw some light on the question of the normal sequence, affiliation and transmutation of the various *vesaniæ* among one another when unmodified by perturbing drugs or other active influences which might abort the natural course or symptoms of the mental malady.

Pathological Histology.—In every State there should be a perfectly appointed central laboratory in charge of a thoroughly competent pathologist and brain anatomist. To this central

laboratory public and private hospitals and practicing physicians should send all pathological material for examination, and complete quarterly reports of all work performed and of results obtained should be published. The work to be done in this pathological field is immense, and no adequate beginning even has ever been made in this scientific line of labor.

The actual pathological changes in brain tissues have to be determined in all the acute and chronic stages of the various types of insanity. The pathological data also have yet to be recorded in the toxic and diathetic cases in both brain and spine, and the microscopical alterations in the evolutional and involutinal cases are still unknown. The order of the morbid neural changes and of the vascular degenerations, in point of time extending often over a series of years, has yet to be satisfactorily demonstrated in a series of cases, and in their relation to the stadial progression of insanity. In the light of future pathological revelations some of the cyclic phases of mental disease will doubtless be found to correspond to progressive anatomical changes in ganglionic nerve centres.

The native insufficiencies of the finer structures of encephalic development are of the utmost pathogenic importance in mental diseases, and they have yet to be pathologically investigated. The premature arrest of cerebral growth present in a large percentage of cases of mental disorder is to be microscopically recognized.

The pathological histology not alone of the brain, but of the spinal, sympathetic and peripheral nervous system, has yet to be studied in insanity, and the morbid anatomy of the basal ganglia and bulbar nuclei is also to be investigated in direct relation to symptoms in the acute psychoses cut short by sudden fatal accident or intercurrent disease. Degeneration of the pneumogastric nucleus, already recorded in some cases of insanity, brings pathological explanation of clinical phenomena, to which the writer drew special attention some years ago. All the future pathological work will constantly shed new light on the etiology and semeiology of the psychoses.

The morphological facts to be determined post mortem by microscopical examination must embrace pathological states of all the internal organs, which, it is now known, have most intimate sympathetic relation to the brain as the great presidial

organ of the body. The autopsical records must show the renal, cardiac, pulmonary, hepatic, splenic, pancreatic, genito-urinary and gastro-intestinal lesions in all cases, and it is also important to establish the negative fact of the absence of pathological changes in internal organs in other cases. The visceral alterations in insanity from infectious diseases and microbic infection require much research, as well as in alienation from other general toxic and diathetic conditions. In the central laboratory assistants may be taught methods of section and staining, and in fact the whole chemical and mechanical technique of microscopical work, but final appearances and data will only be of value when interpreted in the light of the expert knowledge of the chief pathologist, who should alone be deemed responsible for all scientific statements issued from the resulting conclusions of pathological examinations.

Amateur pathological work is without value for scientific purposes and has repeatedly led to delusive inferences. Earnest students of mental science will not countenance the use of the microscope as a scientific toy, or pay any attention to pseudo-scientific articles based on amateur microscopic observations.

Before structural alterations can be logically assigned as the prime cause of mental disorder the absence of like lesions in those dying sane has yet to be demonstrated, and this implies much work and the accumulation of a vast amount of negative evidence before a positive conclusion can be reached. Ganglionic atrophy in normal senility has already been demonstrated, but pigmentation vacuolation and moniliform degeneration may also exist in some degree in sane involution of cerebral tissues, and the senile structural alterations of cortical elements which surely produce insanity have yet to be determined, and a similar statement may be made as regards other organic psychoses, and the whole range of native mental defects due to arrested growth of the encephalic centres.

If all of the pathological material in all of the States was thoroughly studied as above proposed in central laboratories under men of the highest scientific attainments most valuable conclusions could be reached in a few years.

Biochemical Research and Chemical Analysis.—In the same central laboratory should be carried on under an expert physiological chemist, quantitative and qualitative analyses of all the

secretions and excretions of insane patients. The blood and urine should be examined not only in the various types of insanity, but in like stages of the malady in a series of cases for purposes of comparison, and also in the different stadia of the same case. One immediate object of great import would be to establish the relation between the biochemical changes and the actual mental phenomena observed. The perspicacious observation of the ancient writers of the association of hepatic and mental derangement might be found to be directly due to cholesteræmia, and the general relations between visceral and psychic diseases might be rationally explained on the ground of chemical pathology. The whole question of leucomaines and ptomaines and of the general toxic origin of insanity has yet to be thoroughly investigated and it opens up a vast field for chemical work in laboratories. There is not only the probability of systematic auto-intoxication among the insane, but chemical analysis should reveal the possibility of an actual auto-intoxication of the brain by its own detritional products, and lymphatic stasis favoring reabsorption.

Not only the various toxæmias are to be thus chemically demonstrated in their causative relations to insanity, but also the prodromal connections of the diatheses with the psychoses have yet to be made the object of chemical research.

All the secondary toxins generated by the invasion of the human system by micro-organisms are yet to be chemically studied in their full pathogenetic bearings to the acute psychoses; and the question has yet to be settled whether the toxic agents to which the more customary mental disorders are attributed do not after all act through sequent and induced biochemical changes. Finally all the morphological facts, the pathological data, and the ultimate chemical results must be submitted to a master mind having familiarity with all sides of the question and the ability to utilize all the material presented for scientific analysis and logical conclusions for the purposes of practical psychiatry.

The Study of Chemical Phenomena.—The accurate study of the somatic and psychic symptoms of mental disease can be carried on most extensively in large hospitals for the insane, but in private hospitals and in private practice valuable work in this way might be accomplished, and in medical schools throughout

the country a practical and clinical, instead of mere theoretical course of lectures on mental diseases, should be given. In order that the study of clinical phenomena may be exhaustive and scientific in the way needed for the advance of psychiatry, subdivisions of labor are necessary, for only expert and reliable observations will really forward the cause of science. Expertness not only in neurological science, but in the use of all instruments of precision and in all special branches of medical diagnosis, is essential for the comprehensive study of the symptomatology of mental disorders, and it is not possessed fully by single individuals. It would be possible, though, for single members of the medical staff of hospitals for the insane, through special courses of study, to qualify themselves for competent clinical observations in certain directions. One might become accustomed to the use of the ophthalmoscope, another to the otoscope, and another might study electrical apparatus and be able to make reliable electrical tests in muscular disorders of the insane, and another might become expert in gynecological diagnosis, and still another might become skilled in the detection of diseases of the chest, and microscopic work and chemical analysis for the simpler purposes of medical diagnosis would occupy other members of the medical staff. Thus by a simple division of the work to be done, valuable studies of cases might be made. Difficult and doubtful cases should be met by the visits of specialists, who should receive customary remuneration for their services.

In the study of clinical phenomena some comprehensive and uniform method should be adopted with such practical exceptions as the nature of the case might demand.

Among the psychical phenomena would be all anomalies of perception and of the special senses to be carefully investigated.

Tests would be made for the sense of pressure, contact, locality, temperature and pain, and the time-rate of reactions in these directions would be noted. Olfactory and gustatory alterations would be observed, and otoscopic examinations and tests for hearing as to distance and osseous conduction would be in order. The action of ocular muscles and the pupillary reflexes and the fundus of the eye would have to be examined. Hallucinations and illusions of all the special senses would demand investigation.

Disorders of consciousness and memory would have to be carefully recorded, with changes in identity and aphasic states, and tests as to the degree of amnesia would be employed.

Ideation would be studied, and the association or incoherence of thought and the quickened or retarded rate of the same would be determined by well known instruments. Reasoning power and the nature of the delusions would become special subjects of study, and the fundamental emotional tone and the dominant feelings would be recorded.

Among the psychic phenomena also to be noted would be the degree of loss of control, impellant ideas, irresistible impulses, dangerous tendencies, perverted instincts and appetites.

If uniform tests and methods of examination and like records were employed in all hospitals the resulting data would be comparable and of increased value.

The clinical study of the somatic phenomena would necessarily embrace many points, which may be briefly enumerated as follows: 1, Cranial measurements to determine the capacity and asymmetries of the skull and the size relative to the stature, and the record of spinal curvature, mollities ossium or other osseous abnormalities; 2, The physical "stigmata degenerationis;" 3, The study of disorders of the muscular system. The use of electric and dynamometric tests. The record would have to show all peculiarities of gait, speech, handwriting, facial innervation, deep and superficial muscular reflexes, atrophies, contractures, tremors, cataleptoid and tetanoid states and convulsive seizures or Jacksonian epilepsies, as well as permanent and characteristic attitudes and automatic movements peculiar to the insane. None but an accomplished neurologist would be capable of pursuing these investigations to the point of differential diagnosis of the structural lesions underlying the muscular disorders, and at least one member of the medical staff of every hospital for the insane should by special studies become equal to this task of expert investigation. Another kind of expert skill is needed in the detection of cardiac and pulmonary lesions in their causative relations to the symptoms of insane patients. Latent phthisis pulmonalis, cardiac dyspnea from disordered pneumogastric innervation, and various abnormal modifications of respiration are to be recorded. Vascular degenerations are to be noted, and sphymographic studies are to be carried out in the various forms

of insanity. Changes in the epithelial structures, in the hair, nails and skin offer opportunities for research. An expert in skin diseases would find abundant material for investigation among large numbers of the insane. Trophic and vasomotor lesions have never been thoroughly studied. A series of cases observed by comparative tests of cranial, superficial and deep thermometry in the various phases of mental disease would be of much interest, and the general question of vegetative functions and general weight-curve in insanity has only been inadequately recorded. The general connection of disease of the internal organs with insanity, and the effect of acute intercurrent affections on the psychoses has yet to be thoroughly investigated. Finally focal and system diseases of the nervous system, and lesions of cerebral, sympathetic, and peripheral neural structures will tax the diagnostic powers of the clinical worker in the field of mental diseases. There is an almost endless amount of clinical work needed in all these directions, and the labor must be performed according to systematic plans, and there should be a general and well directed concert of scientific efforts rather than desultory individual action.

Statistical Records.—A work greatly needed for the advance of psychiatry is the introduction of a complete and uniform method of statistical records to be made by both hospital and other physicians who treat mental diseases.

The most important question of the increase of insanity can only be determined by figures showing the ratio of first attacks to the numbers in the general population living at the time of their occurrence, since it does not suffice to simply compare the total insane work with the general population at different periods. Uniform methods of the calculation of the mortality-rate and of the recovery-rate and of the influence of age on these percentages should be enforced. All returns should be calculated by quinquennial periods, since lapse of time is so important in its bearings to mental diseases. Careful statistics should be kept of all diseases of the nervous system, and of all intercurrent neurological phenomena among the insane, and the amount and character of sensorial defects should be noted with special care.

Statistics in regard to heredity have been kept in a one-sided way, and have embraced only exceptional members of families suffering from insanity or closely allied affections. Now it is

just as important to record the members of a family not insane as the members suffering from mental disease, in order to determine whether it is the rule or the exception that insane parents beget insane offspring.

Statistical proof of heredity must be based not on partial but on total figures showing both the occurrence and the failures of transmission in all the members of certain generations in supposedly tainted families. It is high time to cease making statistics to tally with given hypotheses, which should only be rationally deduced from a final and full statement of data embracing every member, sane or insane, of certain families. Attention is called in this connection to a broader law than heredity, which is the law of organic failure evident in every domain of nature, but especially recognizable in all the more highly organized forms of animal life. In accordance with the percental chances of this law of organic failure at least one out of every two hundred members of the human species is predestined to gross forms of sensorial and mental deficiency or physical anomalies of development.

It is time to begin exhaustive statistics of all gross failures in the reproduction and growth of all members of given communities, and also to make full records of every form of psychic or somatic stigmata, which are only superficial signs of the general law of organic failure to which allusion has just been made. The forms of statistics thus far proposed for hospitals for the insane are inadequate and lack scientific completeness. In every State there should be employed a scientific medical statistician to formulate uniform records, gather and utilize fully clinical data, and publish annually the practical deductions and the complete methods of his work.

Therapeutic Investigation.—The general pathological states found in insanity are so exceptional that there is need of much careful original research as to the action of therapeutic remedies in mental diseases.

Much work might be performed to great advantage by competent and impartial observers of the action of drugs in the various types of mental disorder. Such scientific observation could only be carried out by one having a thorough knowledge of the physiological effects of remedies, and already skilled in rational therapeutics, and strictly unbiassed in the record of resulting

effects, to be recorded by a complete system of instruments for registering all changes in the vital functions, in secretions and excretions, pulse, temperature, respiration, bodily weight and sleep. Series of cases of the acute psychoses, thus consistently treated and scientifically studied throughout, would go far to establish the relative value of single standard therapeutic agents, which should first be tested, and later mixed forms of treatment might be compared with the first results obtained. The great patience and labor necessary for such a series of scientific observations would be fully rewarded, and the work would advance rational therapeutics in psychiatry, and rebuke a present tendency to endorse empirical specifics after crude trials in individual cases.

The problems of psychiatry are not of a nature to ever be solved by the single strength of any great genius, but they must be laboriously worked out by the united and well directed efforts of specialists.

Thanks to the labor of my hearers many of the material problems of this science have been settled, but higher forms of endeavor have now to be made. It has not been possible in the brief limits of this paper to enter minutely into all the branches of labor required, but an effort has been made to show the main practical lines of work needed for the advance of psychiatry.

MEMORIAL NOTICE.

JAMES T. STEEVES, M. D.

By J. A. E. STEEVES, M. D.,
St. John, N. B.

Dr. James Thomas Steeves, the late superintendent of the Provincial Lunatic Asylum of New Brunswick, held throughout his career a prominent position in the professional body of the Province. Born in 1828, he graduated at the University of New York in 1853, and for twenty years conducted a very extensive and successful general practice, during ten years of which he held a visiting position upon the staff of the General Public Hospital. He was a careful and painstaking surgeon and a very successful operator.

In 1875, upon the retirement of Dr. John Waddell from the superintendency of the Provincial Lunatic Asylum, Dr. Steeves was selected by the Government to fill the vacancy. He had never taken a prominent part in provincial politics, and his selection was due to the high esteem in which he was held by the many who knew him both professionally and personally. A large number of his professional brethren petitioned for his appointment and wrote testimonials in his favor. He entered upon his duties in November, 1875.

Dr. Steeves' labors in his new sphere of activity were extensive, unremitting and diversified. When he entered upon the management of the institution, and for ten years afterward, there was no assistant medical officer, and the staff of subordinate employees would be considered, according to our present notions, very short-handed in number. The superintendent was charged with the direction and responsibility of everything, both indoors and out, including the management of the farm, the stock and

the outbuildings. In addition to his strictly professional duties he had to do a good deal of important book keeping and conduct a heavy correspondence on behalf of a population comprising every variety of mental and nervous disease, which gradually increased from two hundred and fifty-seven in 1875 to three hundred and sixty-seven in 1883, at which last date an assistant medical officer was added to the staff.

All this work Dr. Steeves kept thoroughly "up to the mark," and throughout his long term of office he always gave full satisfaction to the Government who appointed him, to the friends of the patients and to the public. Only those who have been connected with the management of a public asylum can appreciate the full weight and significance of this statement.

To indicate all that the New Brunswick Asylum owes to his skill and energy would be to give a detailed history of the institution for the last twenty-one years, and describe how, during that time it has been gradually enlarged and developed from an asylum for two hundred and fifty-seven patients, arranged and governed upon the ideas prevalent twenty years ago, into one of more than five hundred patients, regulated upon the ideas of 1897. This would be far beyond the limits of a hasty sketch like the present. It may suffice to say that through all these years Dr. Steeves devoted to the development of the institution and the pursuit of the comforts and interests of its patients, all the efforts of an untiring industry and all the skill of a mind quick to seize upon new facts and richly stored with experience. The results will be a lasting memorial to his credit. In September, 1895, Dr. Steeves was suddenly arrested in the midst of his labors by an attack of cerebral hemorrhage which at once and forever brought all his useful activities to an end. Though he rallied to a great extent from the effects of his first seizure, he was never able to perform active duty again, and in March, 1897, a second effusion occurred which proved fatal within four or five days.

Dr. Steeves was an attractive personality to all who knew him. He was a man of fine presence, tall, handsome and courteous. In general conversation he was singularly modest and unassuming, but if asked for an opinion he was always ready to give one and a reason for it. He would rather listen to any man's reason

than the greatest man's authority and could bring a large personal experience to bear upon either. Whether as a listener or a speaker he was always pleasant company.

He had a wonderful memory and practical knowledge of all his patients and a great personal influence over them. In his ward visits he was most punctual and thorough, and when he made a "round" he rarely overlooked the smallest point of management or condition. No attendant could impose on him with "eye service" and no faithful attendant's extra trouble and self-sacrifice ever went unrecognized. It is high but deserved praise to say that his subordinates all thought and spoke well of him.

His industry and activity were unwearied, and he carried perhaps to an extreme the excellent principle of never taking the smallest item of his business for granted, or entrusting its execution to another if it was physically possible for him to attend to it in his own person. By so doing he doubtless added largely to the unavoidably great mental and bodily wear of his position, and probably helped by unnecessary labors to prematurely wear out a splendid natural physique and constitution which, if more carefully husbanded, might have served their owner for much useful work during a more lengthened series of years.

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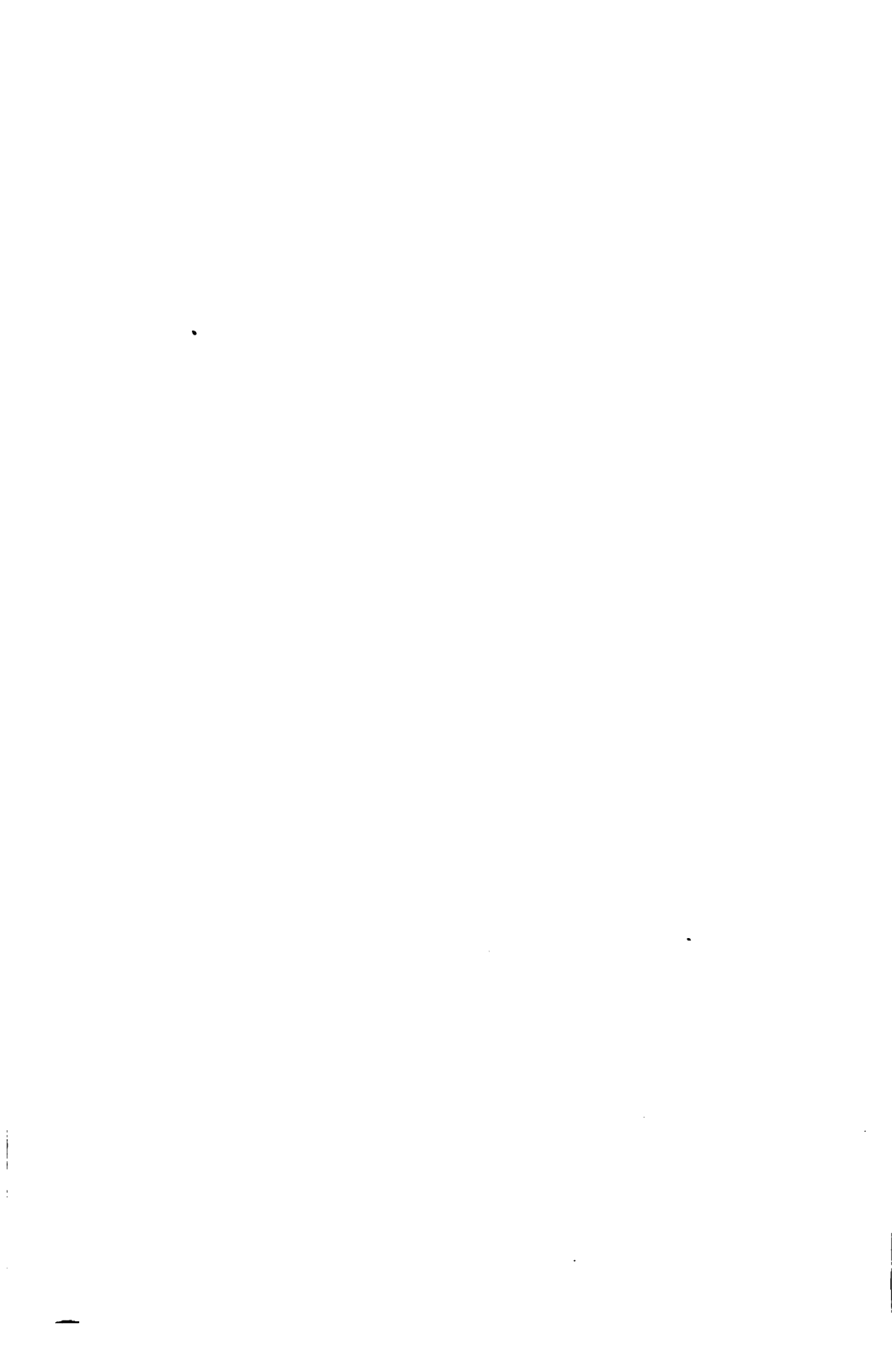
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